Cochrane Library

Cochrane Database of Systematic Reviews

Interventions for drug-using offenders with co-occurring mental health problems (Review)

Perry AE, Martyn-St James M, Burns L, Hewitt C, Glanville JM, Aboaja A, Thakkar P, Santosh Kumar KM, Pearson C, Wright K, Swami S

Perry AE, Martyn-St James M, Burns L, Hewitt C, Glanville JM, Aboaja A, Thakkar P, Santosh Kumar KM, Pearson C, Wright K, Swami S.
Interventions for drug-using offenders with co-occurring mental health problems.
Cochrane Database of Systematic Reviews 2019, Issue 10. Art. No.: CD010901.
DOI: 10.1002/14651858.CD010901.pub3.

www.cochranelibrary.com

WILEY

TABLE OF CONTENTS

[Intervention Review]

Interventions for drug-using offenders with co-occurring mental health problems

Amanda E Perry[1], Marrissa Martyn-St James[2], Lucy Burns[1], Catherine Hewitt[1], Julie M Glanville[3], Anne Aboaja[4], Pratish Thakkar[5], Keshava Murthy Santosh Kumar[5], Caroline Pearson[1], Kath Wright[6], Shilpi Swami[1]

[1]Department of Health Sciences, University of York, York, UK. [2]School of Health and Related Research (ScHARR), University of Sheffield, Sheffield, UK. [3]York Health Economics Consortium, York, UK. [4]Tees, Esk and Wear Valleys NHS Foundation Trust, Middlesbrough, UK. [5]Tees, Esk and Wear Valleys NHS Foundation Trust, York, UK. [6]Centre for Reviews and Dissemination, York, UK

Contact address: Amanda E Perry, Department of Health Sciences, University of York, Heslington, York, YO105DD, UK. amanda.perry@york.ac.uk.

Editorial group: Cochrane Drugs and Alcohol Group
Publication status and date: New search for studies and content updated (no change to conclusions), published in Issue 10, 2019.

Citation: Perry AE, Martyn-St James M, Burns L, Hewitt C, Glanville JM, Aboaja A, Thakkar P, Santosh Kumar KM, Pearson C, Wright K, Swami S. Interventions for drug-using offenders with co-occurring mental health problems. *Cochrane Database of Systematic Reviews* 2019, Issue 10. Art. No.: CD010901. DOI: 10.1002/14651858.CD010901.pub3.

ABSTRACT

Background

This review represents one from a family of three reviews focusing on interventions for drug-using offenders. Many people under the care of the criminal justice system have co-occurring mental health problems and drug misuse problems; it is important to identify the most effective treatments for this vulnerable population.

Objectives

To assess the effectiveness of interventions for drug-using offenders with co-occurring mental health problems in reducing criminal activity or drug use, or both.

This review addresses the following questions.

• Does any treatment for drug-using offenders with co-occurring mental health problems reduce drug use?

• Does any treatment for drug-using offenders with co-occurring mental health problems reduce criminal activity?

• Does the treatment setting (court, community, prison/secure establishment) affect intervention outcome(s)?

• Does the type of treatment affect treatment outcome(s)?

Search methods

We searched 12 databases up to February 2019 and checked the reference lists of included studies. We contacted experts in the field for further information.

Selection criteria

We included randomised controlled trials designed to prevent relapse of drug use and/or criminal activity among drug-using offenders with co-occurring mental health problems.

Data collection and analysis

We used standard methodological procedures as expected by Cochrane .

Main results

We included 13 studies with a total of 2606 participants. Interventions were delivered in prison (eight studies; 61%), in court (two studies; 15%), in the community (two studies; 15%), or at a medium secure hospital (one study; 8%). Main sources of bias were unclear risk of selection bias and high risk of detection bias.

Four studies compared a therapeutic community intervention versus (1) treatment as usual (two studies; 266 participants), providing moderate-certainty evidence that participants who received the intervention were less likely to be involved in subsequent criminal activity (risk ratio (RR) 0.67, 95% confidence interval (CI) 0.53 to 0.84) or returned to prison (RR 0.40, 95% CI 0.24 to 0.67); (2) a cognitive-behavioural therapy (one study; 314 participants), reporting no significant reduction in self-reported drug use (RR 0.78, 95% CI 0.46 to 1.32), re-arrest for any type of crime (RR 0.69, 95% CI 0.44 to 1.09), criminal activity (RR 0.74, 95% CI 0.52 to 1.05), or drug-related crime (RR 0.87, 95% CI 0.56 to 1.36), yielding low-certainty evidence; and (3) a waiting list control (one study; 478 participants), showing a significant reduction in return to prison for those people engaging in the therapeutic community (RR 0.60, 95% CI 0.46 to 0.79), providing moderate-certainty evidence.

One study (235 participants) compared a mental health treatment court with an assertive case management model versus treatment as usual, showing no significant reduction at 12 months' follow-up on an Addictive Severity Index (ASI) self-report of drug use (mean difference (MD) 0.00, 95% CI -0.03 to 0.03), conviction for a new crime (RR 1.05, 95% CI 0.90 to 1.22), or re-incarceration to jail (RR 0.79, 95% CI 0.62 to 1.01), providing low-certainty evidence.

Four studies compared motivational interviewing/mindfulness and cognitive skills with relaxation therapy (one study), a waiting list control (one study), or treatment as usual (two studies). In comparison to relaxation training, one study reported narrative information on marijuana use at three-month follow-up assessment. Researchers reported a main effect < .007 with participants in the motivational interviewing group, showing fewer problems than participants in the relaxation training group, with moderate-certainty evidence. In comparison to a waiting list control, one study reported no significant reduction in self-reported drug use based on the ASI (MD -0.04, 95% CI -0.37 to 0.29) and on abstinence from drug use (RR 2.89, 95% CI 0.73 to 11.43), presenting low-certainty evidence at six months (31 participants). In comparison to treatment as usual, two studies (with 40 participants) found no significant reduction in frequency of marijuana use at three months post release (MD -1.05, 95% CI -2.39 to 0.29) nor time to first arrest (MD 0.87, 95% CI -0.12 to 1.86), along with a small reduction in frequency of re-arrest (MD -0.66, 95% CI -1.31 to -0.01) up to 36 months, yielding low-certainty evidence; the other study with 80 participants found no significant reduction in positive drug screens at 12 months (MD -0.7, 95% CI -3.5 to 2.1), providing very low-certainty evidence.

Two studies reported on the use of multi-systemic therapy involving juveniles and families versus treatment as usual and adolescent substance abuse therapy. In comparing treatment as usual, researchers found no significant reduction up to seven months in drug dependence on the Drug Use Disorders Identification Test (DUDIT) score (MD -0.22, 95% CI -2.51 to 2.07) nor in arrests (RR 0.97, 95% CI 0.70 to 1.36), providing low-certainty evidence (156 participants). In comparison to an adolescent substance abuse therapy, one study (112 participants) found significant reduction in re-arrests up to 24 months (MD 0.24, 95% CI 0.76 to 0.28), based on low-certainty evidence.

One study (38 participants) reported on the use of interpersonal psychotherapy in comparison to a psychoeducational intervention. Investigators found no significant reduction in self-reported drug use at three months (RR 0.67, 95% CI 0.30 to 1.50), providing very low-certainty evidence. The final study (29 participants) compared legal defence service and wrap-around social work services versus legal defence service only and found no significant reductions in the number of new offences committed at 12 months (RR 0.64, 95% CI 0.07 to 6.01), yielding very low-certainty evidence.

Authors' conclusions

Therapeutic community interventions and mental health treatment courts may help people to reduce subsequent drug use and/or criminal activity. For other interventions such as interpersonal psychotherapy, multi-systemic therapy, legal defence wrap-around services, and motivational interviewing, the evidence is more uncertain. Studies showed a high degree of variation, warranting a degree of caution in interpreting the magnitude of effect and the direction of benefit for treatment outcomes.

PLAIN LANGUAGE SUMMARY

Interventions for drug-using offenders with co-occurring mental health problems

What is the aim?

To identify therapies to reduce drug use and/or criminal activity among criminal justice involved people with mental health problems.

What is the key message?

Therapeutic community interventions and mental health treatment courts may help people to reduce subsequent drug use and/or criminal activity.

What was studied?

Therapies identified to support criminal justice involved people with mental health and drug misuse problems.

What are the results?

▪ When men engage with a therapeutic community intervention compared to treatment as usual, they are probably less likely to be re-arrested or return to prison (moderate-certainty).

▪ When women engage with a therapeutic community intervention compared to a cognitive-behavioural course, they may not be more likely to reduce drug use, or become involved in criminal activity/drug-related crimes (low-certainty).

▪ When men engage with a therapeutic community compared to no intervention, they are probably less likely to return to prison (moderate-certainty).

▪ When juveniles engage with a mental health court compared to treatment as usual, they may be less likely to commit a new crime, return to prison, or take drugs (low-certainty).

▪ When juveniles engage with motivational interviewing/mindfulness and cognitive skills, they are probably less likely to show fewer problems than receiving relaxation training (moderate-certainty).

▪ When people engage with motivational interviewing/mindfulness and cognitive skills, they may not be more likely to report a reduction/abstinence from drug use when compared to a waiting list control (low-certainty).

▪ We are uncertain whether people engaged in motivational interviewing/mindfulness and cognitive skills are not more likely to report a reduction in marijuana use, a positive drug test, or to be re-arrested when compared to treatment as usual (very low-certainty).

▪ When families and juveniles engage in multi-systemic therapy, they may be more likely to report a reduction in drug dependence or to be re-arrested in comparison to treatment as usual or group substance abuse therapy (low-certainty).

▪ We are uncertain whether people involved in interpersonal psychotherapy are not more likely to use drugs again in comparison to a psychoeducational intervention (very low-certainty).

▪ We are uncertain whether people involved in legal defence service and wrap-around services are not more likely to commit new offences in comparison to a legal defence service only (very low-certainty).

Sources of funding included government institutes, research bodies, or charities.

How up-to-date is this review?

February 2019.

Summary of findings for the main comparison. Therapeutic community compared to treatment as usual for drug-using offenders with co-occurring mental illness

Therapeutic community compared to treatment as usual for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: prison
Intervention: therapeutic community
Comparison: treatment as usual

Outcomes	№ of participants (studies) Follow up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with treatment as usual	Risk difference with therapeutic community
Re-arrests assessed with official records Follow-up: 12 months	266 (2 RCTs)	⊕⊕⊕⊖ MODERATE[a]	RR 0.67 (0.53 to 0.84)	Study population	
				98 per 100	32 fewer per 100 (46 fewer to 16 fewer)
Re-incarceration assessed with official records Follow-up: 12 months	266 (2 RCTs)	⊕⊕⊕⊖ MODERATE[a]	RR 0.40 (0.24 to 0.67)	Study population	
				59 per 100	36 fewer per 100 (45 fewer to 20 fewer)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the __relative effect__ of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for risk of bias (blinding and selective reporting).

Summary of findings 2. Therapeutic community and aftercare compared to cognitive behavioural skills for drug using women offenders with co-occurring mental illness

Therapeutic community and aftercare compared to cognitive-behavioural skills for drug-using women offenders with co-occurring mental health problems

Patient or population: drug-using women offenders with co-occurring mental health problems
Setting: prison
Intervention: therapeutic community and aftercare
Comparison: cognitive-behavioural skills

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with cognitive-behavioural skills	Risk difference with therapeutic community and aftercare
Self-reported drug use Follow-up: 6 months	314 (1 RCT)	⊕⊖⊖⊖ LOW[a,b]	RR 0.78 (0.46 to 1.32)	Study population	
				17 per 100	4 fewer per 100 (9 fewer to 6 more)
Re-arrest for any type of crime assessed with Colorado Department of Corrections Record Information System (CDOC-RIS) Follow-up: 6 months	314 (1 RCT)	⊕⊖⊖⊖ LOW[a,b]	RR 0.69 (0.44 to 1.09)	Study population	
				33 per 100	10 fewer per 100 (19 fewer to 3 more)
Criminal Activity assessed with Colorado Department of Corrections Record Information System (CDOC-RIS) Follow-up: 6 months	314 (1 RCT)	⊕⊖⊖⊖ LOW[a,b]	RR 0.74 (0.52 to 1.05)	Study population	
				33 per 100	9 fewer per 100 (16 fewer to 2 more)
Drug-related crime assessed with Colorado Department of Corrections Record Information System (CDOC-RIS) Follow-up: 6 months	314 (1 RCT)	⊕⊖⊖⊖ LOW[a,b]	RR 0.87 (0.56 to 1.36)	Study population	
				21 per 100	3 fewer per 100 (9 fewer to 8 more)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the __relative effect__ of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Unclear reporting in the paper raises concerns about the potential high risk of bias with regards to blinding and methods used in the randomisation procedure; we downgraded by one.
[b]One study with 95% confidence intervals through the line of no effect.

Summary of findings 3. Therapeutic community compared to waiting list control for drug-using offenders with co-occurring mental illness

Therapeutic community compared to waiting list control for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: prison
Intervention: therapeutic community
Comparison: waiting list control

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with waiting list control	Risk difference with therapeutic community
Return to prison (recidivism) post parole assessed with California Department of Correction's computerised Offender Based Information System Follow-up: 36 months	478 (1 RCT)	⊕⊕⊕⊖ MODERATE[a]	RR 0.60 (0.46 to 0.79)	Study population	
				40 per 100	16 fewer per 100 (21 fewer to 8 fewer)

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for risk of bias (randomisation process, concealment, and selective reporting).

Summary of findings 4. Mental health treatment court with assertive case management model compared to treatment as usual for drug-using offenders with co-occurring mental illness

Mental health treatment court with assertive case management model compared to treatment as usual for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: court
Intervention: mental health treatment court with assertive case management model
Comparison: treatment as usual

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with treatment as usual	Risk difference with mental health treatment court with assertive case management model
Conviction for a new crime assessed with data from probation office Follow-up: 12 months	235 (1 RCT)	⊕⊖⊖⊖ LOW[a]	RR 1.05 (0.90 to 1.22)	Study population	
				72 per 100	4 more per 100 (7 fewer to 16 more)
Re-incarceration to jail assessed with data from probation office Follow-up: 12 months	235 (1 RCT)	⊕⊖⊖⊖ LOW[a]	RR 0.79 (0.62 to 1.01)	Study population	
				71 per 100	15 fewer per 100 (27 fewer to 1 more)
Self-reported drug use assessed with Addiction Severity Index (ASI) Follow-up: 12 months	235 (1 RCT)	⊕⊖⊖⊖ LOW[a]	-	Mean self-reported drug use was 0.08	MD 0.00 (-0.03 lower to 0.03 higher)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for risk of bias (allocation concealment and blinding of assessors) and by one for imprecision.

Summary of findings 5. Motivational interviewing/mindfulness and cognitive skills compared to relaxation training for drug-using offenders with co-occurring mental illness

Motivational interviewing/mindfulness and cognitive skills compared to relaxation training for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: prison
Intervention: motivational interviewing and cognitive skills
Comparison: relaxation training

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Impact
Self-reported marijuana use continuous	181 (1 RCT)	MODERATE[a]	This study compared cognitive skills to a relaxation training intervention for adolescents in prison with depressed mood. Researchers measured marijuana use at 3-months follow-up assessment using the Risks and Consequences Questionnaire (RCQ). They report a main effect < .007, with participants in the motivational interviewing group showing fewer problems than participants in the relaxation training group.

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for unclear risk of bias (random allocation and blinding).

Summary of findings 6. Motivational interviewing/mindfulness and cognitive skills compared to waiting list control for drug-using offenders with co-occurring mental illness

Motivational interviewing/mindfulness and cognitive skills compared to waiting list control for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: prison

Intervention: motivational interviewing and cognitive skills
Comparison: waiting list control

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with waiting list control	Risk difference with motivational interviewing and cognitive skills
Self-reported drug use assessed with Addiction Severity Index (ASI) composite drug score across 13 items of drug use in the last 30 days Follow-up: 6 months	31 (1 RCT)	⊕⊕⊖⊖ LOW[a]	-	Mean self-reported drug use was 0.44	MD -0.04 lower (-0.37 lower to 0.29 higher)
Abstinence from drug use Follow-up: 6 months	31 (1 RCT)	⊕⊕⊖⊖ LOW[a]	RR 2.89 (0.73 to 11.43)	Study population	
				15 per 100	29 more per 100 (4 fewer to 160 more)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; MD: mean difference; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by two for optimal information size not met.

Summary of findings 7. Motivational interviewing/mindfulness and cognitive skills compared to treatment as usual for drug-using offenders with co-occurring mental illness

Motivational interviewing/mindfulness and cognitive skills compared to treatment as usual for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: medium secure hospital and jail
Intervention: motivational interviewing and cognitive skills
Comparison: treatment as usual

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with treatment as usual	Risk difference with motivational interviewing and cognitive skills
Self-reported frequency of marijuana use assessed with TCU-CRTF (Texas Christian University: Correctional Residential Treatment Form) Scale from 0 to 32 Follow-up: 3 months	40 (1 RCT)	⨁⨁◯◯ VERY LOW[a,b]	-	Mean self-reported frequency of marijuana use was 1.50	MD -1.05 lower (-2.39 lower to 0.29 higher)
Arrest frequency post release assessed with official police records Follow-up: 36 months	40 (1 RCT)	⨁⨁◯◯ VERY LOW[a,b]	-	Mean arrest frequency post release was 1.47	MD -0.66 lower (-1.31 lower to -0.01 lower)
Time to first arrest or offence assessed with official police records Follow-up: 36 months	40 (1 RCT)	⨁⨁◯◯ VERY LOW[a,b]	-	Mean time to first arrest or offence was 1.6	MD 0.87 higher (-0.12 lower to 1.86 higher)
Positive drug screen or refusal to provide a urine sample assessed with urine sample Scale from negative to positive Follow-up: 12 months	84 (1 RCT)	⨁◯◯◯ VERY LOW[a,b]	-	Mean positive drug screen or refusal to provide a urine sample was 3.25	MD -0.7 lower (-3.5 lower to 2.1 higher)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the __relative effect__ of the intervention (and its 95% CI).

CI: confidence interval; MD: mean difference; RCT: randomised controlled trial.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by two for optimal size not met.
[b]Downgraded by one for risk of bias (incomplete outcome measures).

Summary of findings 8. Multi-systemic therapy involving family and juveniles compared to treatment as usual for drug-using offenders with co-occurring mental illness

Multi-systemic therapy involving family compared to treatment as usual for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: community
Intervention: multi-systemic therapy involving family
Comparison: treatment as usual

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with treatment as usual	Risk difference with multi-systemic therapy involving family
Drug dependence assessed with DUDIT questionnaire Scale from 0 to 44 Follow-up: 7 months	156 (1 RCT)	⊕⊕⊖⊖ LOW[a]	-	Mean drug dependence was 3.55	MD -0.22 lower (-2.51 lower to 2.07 higher)
Arrested assessed by corroborating with police data Follow-up: 7 months	158 (1 RCT)	⊕⊕⊖⊖ LOW[a]	RR 0.97 (0.70 to 1.36)	Study population	
				47 per 100	1 fewer per 100 (14 fewer to 17 more)

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; MD: mean difference; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for risk of bias (blinding measures) and downgraded by one for imprecision.

Summary of findings 9. Multi-systemic therapy involving family compared to group substance abuse therapy for drug-using adolescents with co-occurring mental illness

Multi-systemic therapy involving family compared to group substance abuse therapy for drug-using adolescents with co-occurring mental health problems

Patient or population: drug-using adolescents with co-occurring mental health problems
Setting: court
Intervention: multi-systemic therapy involving family
Comparison: group substance abuse therapy

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with group substance abuse therapy	Risk difference with multi-systemic therapy involving family
Arrests Follow-up: range 6 months to 24 months	112 (1 RCT)	⊕⊕⊖⊖ LOW[a]	-	Mean arrests were 1.19 SD	MD -0.24 SD lower (-0.76 lower to 0.28 higher)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; MD: mean difference; RCT: randomised controlled trial; SD: standard deviation.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by one for risk of bias (selective reporting of outcomes) and by one for imprecision.

Summary of findings 10. Interpersonal psychotherapy compared to a psychoeducational intervention for drug-using offenders with co-occurring mental illness

Interpersonal psychotherapy compared to a psychoeducational intervention for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: prison
Intervention: interpersonal psychotherapy
Comparison: psychoeducational intervention

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with a psychoeducational intervention	Risk difference with interpersonal psychotherapy
Substance abuse relapse post release Follow-up: 3 months	38 (1 RCT)	⊕⊕⊖⊖ VERY LOW[a,b]	RR 0.67 (0.30 to 1.50)	Study population	
				47 per 100	16 fewer per 100 (33 fewer to 24 more)

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by two for optimal size not met.
[b]Downgraded by one for risk of bias (selective reporting outcomes).

Summary of findings 11. Legal defence service and wrap-around social work services compared to legal defence service only for drug-using offenders with co-occurring mental illness

Legal defence service and wrap-around social work services compared to legal defence service only for drug-using offenders with co-occurring mental health problems

Patient or population: drug-using offenders with co-occurring mental health problems
Setting: court
Intervention: legal defence service and wrap-around social work services
Comparison: legal defence service only

Outcomes	№ of participants (studies) Follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects* (95% CI)	
				Risk with legal defence services only	Risk difference with legal defence services and wrap-around social work services
Committing new offences	29 (1 RCT)	⊕⊕⊖⊖ VERY LOW[a,b]	RR 0.64 (0.07 to 6.01)	Study population	

Follow-up: 12 months			1 per 100	2 fewer per 100 (0 fewer to 2 fewer)

*__The risk in the intervention group__ (and its 95% confidence interval) is based on the assumed risk in the comparison group and the __relative effect__ of the intervention (and its 95% CI).

CI: confidence interval; RCT: randomised controlled trial; RR: risk ratio.

GRADE Working Group grades of evidence.
High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.
Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

[a]Downgraded by two for optimal size not met.
[b]Downgraded for risk of bias (incomplete outcome data).

BACKGROUND

This review is part of a family of three reviews providing a close examination of what works in reducing drug use and criminal activity among drug-using offenders. These three reviews report on trials generating several publications and numerous comparisons (Perry forthcominga; Perryforthcomingc). Two of the three reviews represent a specific interest in pharmacological interventions and interventions for female offenders. All three reviews stem from a previous Cochrane systematic review (Perry 2006). We consider the effectiveness of interventions based on two key outcomes - drug use and criminal activity. We have presented here the revised method for this individual review, focusing on the impact of interventions for drug-using offenders with co-occurring mental health problems.

Description of the condition

People involved in the criminal justice system are more likely to experience mental health problems. Many studies report different prevalence figures dependent upon the methods used to estimate prevalence (Fazel 2016). Some studies report generic figures that represent all serious mental health problems - e.g. over half (64%) of jail inmates in the United States reporting serious mental health problems (Glase 2006) - and others attempt to break down different types of mental health diagnoses (e.g. psychosis vs major depression). In a systematic review of 33,000 prisoners, one in seven prisoners had major depression or psychosis, with little change in rates of diagnoses over the past three decades (Fazel 2012).

Differences in the prevalence of mental health problems differentiate between males and females and by age. One study of mental health problems in jails found that more women than men (31% and 14.5%, respectively) have a serious mental health problem (Steadman 2009), and one estimate suggests that two-thirds of juveniles in detention custody have a mental health disorder severe enough to limit their ability to function (Shufelt 2006). Moreover, violent female offenders were found to be five times more likely than male offenders to present with anxiety disorders (Waserman 2005). Other studies have reported that a greater proportion of people who have mental health problems are more likely to be arrested compared with the general population (Lamb 1998).

We also know that rates of comorbidity between mental health problems and substance misuse are high (Butler 2011). Such comorbidity worsens the prognosis of the individual psychiatric disorder and increases the likelihood of repeat offending and premature mortality after release (Chang 2015). Despite these difficulties, it is unknown how well interventions devised to deal with this comorbidity address these problems (Fazel 2002).

Description of the intervention

Many different treatments for substance misuse (e.g. detoxification, therapeutic communities) have been adopted for use in the criminal justice system. This review includes any intervention that was designed to reduce, eliminate, or prevent relapse to drug use or criminal activity, or both. This goal has resulted in the inclusion of a wide range of treatments, including mental health treatment courts with an assertive case management model, therapeutic communities, motivational interviewing (MI) with cognitive skills, use of multi-systemic/multi-dimensional therapy involving families and mindfulness training, legal defence service with wrap-around social services, and interpersonal psychotherapy .

Case management evolved traditionally to address the needs of prisoner re-entry programmes covering employment, education, health, housing, and family support via assessment and connection of clients with appropriate services (Austin 1994). Case management in the United States has been applied in Treatment Accountability for Safer Communities programmes (Marlowe 2003b); it has shown initial effectiveness but *without* systematic evidence in support of the process. In the United Kingdom, similar wrap-around service provision was developed in the 1980s in an attempt to provide services that were more comprehensive by using a 'joined up' approach (Synder 2012). Wrap-around service provision requires a team-based approach that includes the young person, the family, and service providers in developing, implementing, and evaluating each part of any support plan (Wilson 2008).

Mental health treatment courts help to link offenders who would ordinarily be prison-bound to long-term community-based treatment. They rely on mental health assessments, individualised treatment plans, and ongoing judicial monitoring to address both the mental health needs of offenders and the public safety concerns of communities. Like other problem-solving courts such as drug courts, domestic violence courts, and community courts, mental health courts seek to address the underlying problems that contribute to criminal behaviour. Mental health courts share characteristics with crisis intervention teams, jail diversion programmes, specialised probation and parole caseloads, and a host of other collaborative initiatives intended to address the significant overrepresentation of people with mental illness in the criminal justice system.

Since the 1960s, therapeutic community interventions have been used in the United States in combination with work release programmes to rehabilitate offenders via a supportive environment over a relatively long period. Therapeutic community interventions specifically providing aftercare have modest effects on the reduction of recidivism and drug use (Mitchell 2012a; Pearson 1999), but less is known about the impact of using such schemes with people who have mental health and drug misuse problems that co-occur (e.g. Sacks 2008).

Cognitive-behavioural approaches, including self-monitoring, goal-setting, self-control training, interpersonal skills training, relapse prevention, group work, and lifestyle modification, have shown signs of success (Lipsey 2007). Previous research based on systematic reviews has excluded evaluations focusing specifically on the needs of drug-using offenders and/or mentally disordered offenders, but not for people with co-occurring mental health and drug misuse problems. Motivatonal interviewing techniques are often employed to promote retention in treatment and are aimed at enhancing motivational change and reducing subsequent re-offending (McMurran 2009; Smedslund 2011).

Multi-systemic/multi-dimensional therapy (MST/MDST) consists of intensive family- and community-based treatment provided to adolescents with serious clinical, social, and emotional difficulties. Research on the effectiveness of MST has failed to produce findings that MST is more effective than other services in preventing restrictive out-of-home living arrangements, reducing arrests or convictions, or improving life and family functioning (Littell 2005). The transferability of such schemes has been questioned with variable

findings when employed in different countries and contexts (Bogt 2006). MDST has also been employed via the juvenile drug court model, which is designed to address the link between substance abuse and criminal activity; it is compared in current work to manualised group-based substance abuse treatment (adolescent group treatment (AGT)) (Dakof 2015).

Despite growing knowledge about the effectiveness of treatment programmes for offenders, it appears that no recent systematic review evidence has focused on the effectiveness of treatment for offenders with drug misuse *and* co-occurring mental health problems.

How the intervention might work

Interventions delivered to drug-using offenders under the care of the criminal justice system have varied over time. Case management is used to describe what amounts to a range of diverse practices and supervision models spanning several different services, including probation. Examples of case management have been used to co-ordinate and integrate all aspects of community supervision, from initial offender needs assessment through to programme delivery and intended completion of the order or sentencing requirement (Partridge 2004). Similarly, wrap-around care has several strengths in its approach, including the family-centred and culturally sensitive tailoring of each service plan to needs, values, and talents of the individual person (Synder 2012).

Mental health treatment courts aim to identify clients early on in the criminal process, either at the jail or by court staff such as pretrial service officers or social workers in the public defender's office. Most courts have criteria related to what types of charges, criminal histories, and diagnoses will be accepted. For example, a court may accept only defendants charged with misdemeanours who have no history of violent crimes, and who have an Axis I diagnosis based on recognised diagnostic criteria. Defendants who fit the criteria based on the initial screening are usually given a more comprehensive assessment to determine their interest in participating and their community treatment needs. Defendants who agree to participate receive a treatment plan and other community supervision conditions. Cases are dismissed or the sentence is greatly reduced for those who adhere to their treatment plan for the agreed upon time, usually between six months and two years.

Since the 1960s, therapeutic community interventions have been used in the United States in combination with work release programmes to rehabilitate offenders via a supportive environment over a relatively long period. This usually encompasses the transition between being in prison and working within the community (Prendergast 2011). The ethos of a therapeutic community intervention is to focus on treatment for the whole self (not on the drug abuse per se) and underlying symptomatic problems, with residents instrumental in running the therapeutic community (Mitchell 2012a). These interventions are usually based on group activities provided to address long-term mental illness, personality disorders, and drug addiction. The approach is usually residential, with clients and therapists living together.

Cognitive-behavioural therapy (CBT) approaches using programmes based on psychological theory have been employed to try to help people address their offending behaviour and generally have received good support from the literature in their reduction of recidivism. This therapy is often described as a psychosocial intervention that aims to improve mental health. CBT focuses on challenging and changing unhelpful cognitive distortions (e.g. thoughts, beliefs, attitudes) and behaviours, improving emotional regulation, and developing personal coping strategies that target solving current problems. Originally, it was designed to treat depression, but its uses have been expanded to include treatment of various mental health conditions, including anxiety.

Interpersonal psychotherapy (IPT) is a brief, attachment-focused psychotherapy that centres on resolving interpersonal problems and achieving symptomatic recovery. It is an empirically supported treatment (EST) that follows a highly structured and time-limited approach and is intended to be completed within 12 to 16 weeks. IPT is based on the principle that relationships and life events impact mood, and that the reverse is also true.

Miller and Rollnick developed motivational interviewing as a process to motivate change in substance abusers (Miller 1991). This technique uses different strategies such as expressing empathy, avoiding arguing for change, and working on ambivalence to strengthen commitment to change. Meta-analyses support the use of motivational interviewing as a stand-alone treatment and in combination with more intensive programmes (Vasilaki 2006). Linked to this idea of commitment to change is the idea of self-control, which has established links between substance use and antisocial behaviour (Malouf 2014). The theory suggests that use of mindfulness involves greater self-awareness, which may promote thoughtful rather than reactive responding and might help to improve mood and problem behaviour (Shonin 2013).

Why it is important to do this review

Many people who are under the care of the criminal justice system have co-occurring mental health problems and drug misuse problems. Although previous research has broadly evaluated treatment programmes for offenders, we know little about the challenges, treatments, and rehabilitation opportunities for offenders with co-occurring mental health and drug misuse problems. We therefore believe that an evaluation of existing evidence on the impact of interventions for drug-using offenders with co-occurring mental health problems might be helpful in identifying treatments for reducing drug use and criminal activity in this vulnerable population.

OBJECTIVES

To assess the effectiveness of interventions for drug-using offenders with co-occurring mental health problems in reducing criminal activity or drug use, or both.

This review addresses the following questions.

- Does any treatment for drug-using offenders with co-occurring mental health problems reduce drug use?
- Does any treatment for drug-using offenders with co-occurring mental health problems reduce criminal activity?
- Does the treatment setting (court, community, prison/secure establishment) affect intervention outcome(s)?
- Does the type of treatment affect treatment outcome(s)?

METHODS

Criteria for considering studies for this review

Types of studies

Randomised controlled trials (RCTs).

Types of participants

We included people involved in the criminal justice system with co-occurring mental health problems and drug misuse problems regardless of gender, age, or ethnicity. Drug misuse included any study that referred to participants who used occasionally, were dependent, or were known to abuse drugs. We defined offenders as people who were involved in the criminal justice system. Individuals could reside in special hospitals, prisons, or the community or were diverted from court or placed on arrest referral schemes for treatment. The study setting could change throughout the process of the study. For example, people involved in the criminal justice system could begin in prison but progress through a work release project into a community setting. We judged offenders to have co-occurring mental health problems when the paper explicitly stated this. We used several different mechanisms to identify study samples with mental health problems, including:

- diagnostic gold standard tests such as criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV),* or the *International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD-10)*;
- the nature of the intervention (e.g. mental health court); and/or
- study authors' descriptions of participants as having a "history of psychiatric health problems" or a "serious mental disorder" with co-occurring substance misuse.

Types of interventions

Included interventions were designed, wholly or in part, to eliminate or prevent relapse to drug use or criminal activity, or both, among participants. We included a range of interventions in the review.

Experimental interventions included in the review

- Any pharmacological intervention (e.g. buprenorphine, methadone)
- Any psychosocial intervention (e.g. therapeutic community, case management, cognitive-behavioural therapy, interpersonal psychotherapy, motivational interviewing)

Control interventions included in the review

- No treatment or waiting list control
- Minimal and/or alternative treatment (e.g. reporting use of a similar but less intense intervention, using a different theoretical approach with the same components and/or a different alternative intervention)
- Treatment as usual (included any study that reported a combination and/or component of (1) a psychologically based intervention (e.g. anger management, motivational interviewing, counselling, aggression replacement, family therapy), (2) an educational programme (e.g. health, substance abuse education on risky behaviour), and/or (3) life skills (e.g. financial planning, employment skills, computer skills, interpersonal skills in interviews)

Types of outcome measures

Primary outcomes

When papers reported several different follow-up periods, we reported the longest period, as we believe this measure provides the most conservative estimate of effectiveness. We provided:

- drug use measures reported as:
  - self-reported drug use (unspecified drug, specific drug use not including alcohol, Addiction Severity Index composite scores); or
  - biological drug use (measured by drugs testing urine or analysing hair); and
- criminal activity as measured by:
  - self-reported or officially reported criminal activity (including arrest for any offence, drug offences, and/or re-incarceration).

Search methods for identification of studies

Electronic searches

Updated searches identified records from 2014 to 6 February 2019.

- Cochrane Central Register of Controlled Trials (CENTRAL; issues to February 2019).
- MEDLINE (1966 to February 2019).
- Embase (1980 to February 2019).
- PsycINFO (1978 to February 2019).
- SciSearch (Science Citation Index) (1974 to February 2019).
- Social SciSearch (Social Science Citation Index) (1972 to February 2019).
- Applied Social Sciences Index and Abstracts (ASSIA; 1987 to February 2019).
- National Technical Information Service (NTIS; 1964 to March 2014).[a]
- Sociological Abstracts (1963 to March 2014).[b]
- Healthcare Management Information Consortium (HMIC; to February 2019).
- Public Affairs Information Service (PAIS; 1972 to February 2019).
- Criminal Justice Abstracts (1968 to February 2019).
- Latin American Caribbean Health Sciences Literature (LILACS; 2004 to February 2019).
- Current Controlled Trials (December 2009).[c]
- SPECTR (March 2004).[d]
- Cumulative Index to Nursing and Allied Health Literature (CINHAL)plus (up until February 2019).

[a]Paid access only - insufficient resources to search.

[b]Not available to search through York University.

[c]No longer available to search.
[d]No public access through Campbell Collaboration website, which previously hosted the database.

To update the review, we restricted the search to studies that were published since the end date of the previous search (May 2014). We did not search several original databases indicated by the key at the end of the database list. One database (NTIS) was fee charg-

ing, and the other three databases (Sociological Abstracts, Current Controlled Trials, and SPECTR) were not available for searching due to changes in the provision of databases through the University of York.

We developed search strategies for each database to exploit the search engine most effectively and to make use of any controlled vocabulary. We included methodological search filters designed to identify RCTs. Whenever possible, we used filters retrieved from the InterTASC Information Specialists' Sub-Group (ISSG) Search Filter Resource site (www.york.ac.uk/inst/crd/intertasc/). If filters were unavailable from this site, we substituted search terms based on existing versions. We did not place any language restrictions on identification and inclusion of studies in the review.

We have listed details of the update search strategies and results and the websites searched in Appendix 1, Appendix 2, Appendix 3, Appendix 4, Appendix 5, Appendix 6, Appendix 7, Appendix 8, Appendix 9, Appendix 10, and Appendix 11.

Searching other resources

Reference checking

We scrutinised the reference lists of all retrieved articles for additional references and searched the catalogues of relevant organisations.

Personal communication

We sought out experts for their knowledge of other published or unpublished studies relevant to the review.

Data collection and analysis

Selection of studies

A team of review authors independently inspected the search hits by reading the titles and abstracts. Each potentially relevant study was obtained as a full-text article. Each article was independently assessed for inclusion. In the case of discordance, a third independent review author arbitrated. One review author undertook translation of articles not written in the English language.

We divided the screening process into two key phases. Phase one used eight key questions as reported in the original review.

Prescreening criteria: phase one

- Is the document an empirical study? If not, exclude the document
- Does the study evaluate an intervention, a component of which is designed to reduce, eliminate, or prevent relapse with drug-using offenders?
- Are participants referred by the criminal justice system at baseline?
- Does the study report pre- and post-programme measures of drug use?
- Does the study report pre- and post-programme measures of criminal behaviour?
- Is the study an RCT?
- Do the outcome measures refer to the same length of follow-up for the two groups?

Papers included after phase one screening were then scrutinised for further assessment.

Prescreening criteria: phase two

- Does the study population comprise wholly participants with diagnosed mental health problems using DSM-IV or ICD-10 diagnostic criteria? if yes, include the document
- Does the study population comprise wholly participants identified on screening to have a mental health problem(s) based on intervention eligibility (e.g. mental health court)? if yes, include the document
- When the full study population does not comprise offenders with diagnosed or presumed mental health problems, are separate results given for those participants with mental health problems? if no, exclude the document

Data extraction and management

We used data extraction forms to standardise the reporting of data from all studies obtained as potentially relevant. Two review authors independently extracted data and subsequently checked them for agreement. The narrative tables presented study details (e.g. author, year of publication, country of study origin), study methods (e.g. random assignment), participants (e.g. number in sample, age, gender, ethnicity, age, mental health status), interventions (e.g. description, duration, intensity, setting), outcomes (e.g. description, follow-up period, reporting mechanism), and notes (e.g. country, funding).

Assessment of risk of bias in included studies

The team of review authors independently assessed risk of bias of all included studies using the 'Risk of bias' assessment criteria recommended in the *Cochrane Handbook for Systematic Reviews of Interventions* (Higgins 2011).

The recommended approach for assessing risk of bias in studies included in Cochrane Reviews involves a two-part tool that addresses four specific domains, namely, sequence generation and allocation concealment (selection bias), blinding of outcome assessors (detection bias), incomplete outcome data (attrition bias), and selective outcome reporting (reporting bias). The first portion of the tool involves describing what was reported to have happened in the study. The second portion of the tool involves assigning a judgement related to the risk of bias for that entry, in terms of low, high, or unclear risk. To make these judgements, we used the criteria indicated by the *Cochrane Handbook for Systematic Reviews of Interventions, as* adapted to the addiction field. See Appendix 12 for details.

The domains of sequence generation and allocation concealment (avoidance of selection bias) were addressed in the tool by a single entry for each study.

Participants and personnel cannot be blinded to the type of intervention; moreover, we think that being aware of receiving a psychosocial treatment is in itself part of the therapeutic effect; for these reasons, we did not assess risk of performance bias.

Detection bias was considered separately for objective outcomes (e.g. dropout, use of substance of abuse measured by urine analysis, participants relapsed at end of follow-up, participants engaged in further treatments) and subjective outcomes (e.g. duration and

severity of signs and symptoms of withdrawal, participant self-reported use of substance, side effects, social functioning as integration at school or at work, family relationship).

Incomplete outcome data (avoidance of attrition bias) was considered for all outcomes except for dropout from treatment, which is very often the primary outcome measure in trials on addiction.

For studies identified in the search, the review authors attempted to contact study authors to establish whether a study protocol was available.

Measures of treatment effect

The mean differences (MD) with 95% confidence intervals (CIs) was used for continuous outcomes measured on the same scale, and the standardised mean difference (SMD) was used for continuous outcomes measured on different scales. Higher scores for continuous measures are representative of greater harm. We presented dichotomous outcomes as risk ratios (RRs), with 95% CIs.

Unit of analysis issues

To avoid double-counting of outcome measures (e.g. arrest, parole violation) and follow-up periods (e.g. 12 months, 18 months), we checked all trials to ensure that multiple studies reporting the same evaluation did not contribute towards multiple estimates of programme effectiveness. We followed Cochrane guidance, and where appropriate, we combined intervention and control groups to create a single pair-wise comparison. When this was not appropriate, we selected one treatment arm and excluded the others.

Dealing with missing data

We attempted to contact study authors via email when we noted missing data in the original publication.

Assessment of heterogeneity

We assessed heterogeneity using the I^2 statistic and the Chi^2 statistic (Higgins 2011). We regarded heterogeneity as substantial if I^2 was greater than 50% or if the P value was lower than 0.10 for the Chi^2 test for heterogeneity (Deeks 2017). In keeping with the guidance provided in the *Cochrane Handbook for Systematic Reviews of Interventions* (Deeks 2017), we distinguished the following values to denote no important heterogeneity and moderate, substantial, and considerable heterogeneity, respectively: 0% to 40%, 30% to 60%, 50% to 90%, and 75% to 100%.

Data synthesis

We used the RevMan software package to perform a series of meta-analyses for continuous and dichotomous outcome measures (RevMan 2012). We used a random-effects model to account for the fact that participants did not come from a single underlying population. We combined two studies of the therapeutic community and aftercare in comparison to treatment as usual.

Subgroup analysis and investigation of heterogeneity

We had planned to conduct sensitivity analyses to assess the impact of studies at high risk of bias compared with those at low or unclear risk of bias. Because of the overall high risk of bias of the included studies, this analysis was not possible.

Grading of evidence and 'Summary of findings' tables

We assessed the overall quality of the evidence for the following primary outcomes using the GRADE system: relapse, frequency of use, extent of use, any adverse events, and dropout from treatment. The GRADE Working Group developed a system for grading the quality of evidence (Schunemann 2013); this system takes into account issues related not only to internal validity but also to external validity, such as directness of results.

We have presented the main findings of the review in a 'Summary of findings' table. This transparent and simple tabular format provides key information concerning quality of evidence, magnitude of effect of the interventions examined, and sums of available data for the main outcomes.

The GRADE system uses the following criteria for assigning grades of evidence.

- High: we are very confident that the true effect lies close to that of the estimate of the effect.
- Moderate: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- Low: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
- Very low: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Grading is decreased for the following reasons.

- Serious (-1) or very serious (-2) study limitations for risk of bias.
- Serious (-1) or very serious (-2) inconsistency between study results.
- Some (-1) or major (-2) uncertainty about directness (correspondence between the population, the intervention, or the outcomes measured in the studies actually found and those under consideration in our systematic review).
- Serious (-1) or very serious (-2) imprecision of the pooled estimate.
- Publication bias strongly suspected (-1).

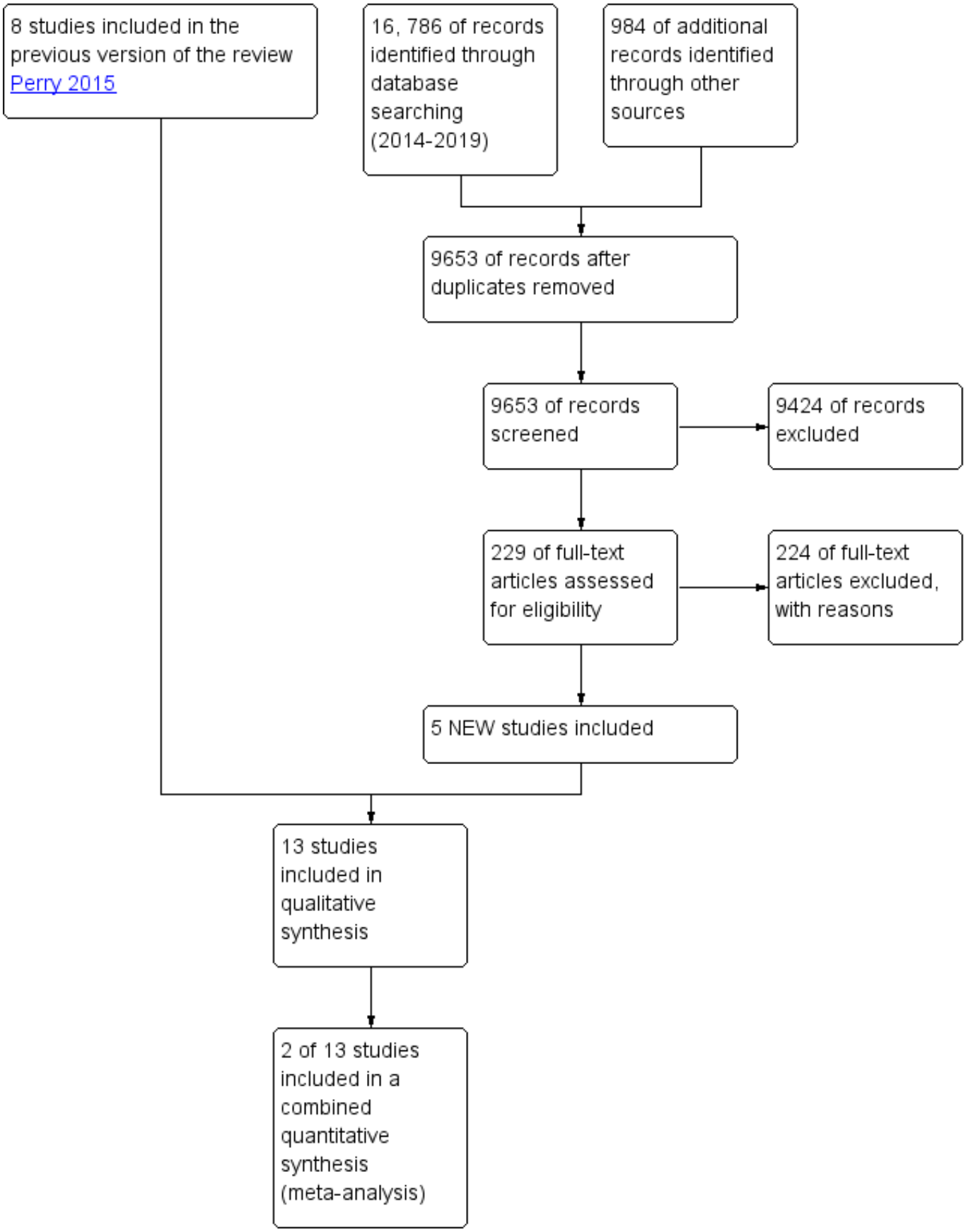
RESULTS

Description of studies

Results of the search

As shown in Figure 1, our update searches identified 9653 records. We screened out 9424 references based on titles and abstracts. We examined the remaining 229 records in full text and excluded 224 of them (see Characteristics of excluded studies). We included five new trials,(Cullen 2012; Dakof 2015; Malouf 2017; McCarter 2016; Sundell 2008), along with one follow-up study to an existing trial within the review (Lanza 2014), and we included three ongoing trials (Baldus 2011; Tinland 2013; VanDorn 2017), along with eight studies from the previous review. The total number of included studies is 13 (see Characteristics of included studies).

Figure 1. Study flow diagram.



Included studies

Population

The 13 included trials randomised a total of 2606 participants and were published between 1999 and 2017. Seven of the 13 trials included adult drug-using offenders. Three studies investigated the impact on interventions with adolescents and/or youth (Dakof 2015; McCarter 2016; Stein 2011). Two studies included females only (Johnson 2012; Sacks 2008). Three studies reported on juveniles or youth involved in the criminal justice system (Dakof 2015; McCarter 2016; Stein 2011). Adult male offenders were the focus of study populations in the remaining studies, with a mean age of 30 years. In all but two studies (Cullen 2012; McCarter 2016), most participants were of white ethnic origin.

Mental health diagnoses varied across studies (see Table 1.

Settings

Eight studies were conducted in a secure setting (Johnson 2012; Lanza 2014; Malouf 2017; Sacks 2004; Sacks 2008; Sacks 2011; Stein 2011; Wexler 1999), two studies were conducted in community settings (Cosden 2003; Sundell 2008), and two studies were conducted in court settings (Dakof 2015; McCarter 2016). One study was conducted with a medium forensic secure hospital population in the United Kingdom (Cullen 2012). Studies were published in the United States (n = 10/13; 76%), Spain (n = 1/13; 7.6%), the United Kingdom (n = 1/13; 7.6%), and Sweden (n = 1/13; 7.6%).

Duration of trials

Trial duration varied between three-month follow-up in Johnson 2012, Lanza 2014, Stein 2011, and Sundell 2008, and five-year follow-up in Wexler 1999. Six-month follow-up was reported in Cosden 2003, Dakof 2015, and Sacks 2008. The remaining studies reported on outcomes at 12, 24, and 36 months (Cosden 2003; Cullen 2012; Dakof 2015; Malouf 2017; McCarter 2016; Sacks 2011; Sacks 2004). Treatment duration was most intensive (e.g. lasting between three and seven days per week) when a therapeutic community model was employed for periods of up to 12, 18, and 24 months (e.g. Sacks 2004; Sacks 2008; Sacks 2011); typically all other treatment interventions lasted between four and six months (e.g. Cullen 2012; Lanza 2014). The shortest treatment intervention was delivered in a 90-minute session followed by a 60-minute booster session upon release (Stein 2011).

Outcome measures

A total of 5 of 13 (38%) trials reported drug outcomes (Cullen 2012; Johnson 2012; Lanza 2014; Stein 2011; Sundell 2008), 5 of 13 (38%) reported crime outcomes (Dakof 2015; McCarter 2016; Sacks 2004; Sacks 2011; Wexler 1999), and 3 of 13 (23%) reported both drug and crime outcomes (Cosden 2003; Malouf 2017; Sacks 2008).

Interventions

Therapuetic interventions and aftercare

Four studies compared a therapeutic community (TC) intervention with aftercare versus treatment as usual (Sacks 2004; Sacks 2011), another intervention (Sacks 2008), or no intervention (Wexler 1999). Sacks 2004 compared a modified TC residential treatment programme using a cognitive-behavioural curriculum to change attitudes and lifestyles versus a programme of intensive psychiatric services with medication, weekly individual therapy and counselling, and specialised groups of cognitive-behavioural work, anger management, therapy and education, domestic violence, parenting, and weekly drug/alcohol therapy sessions.

Sacks 2008 evaluated a modified TC group with programme activities supplemented by peer-led activities on weekends in comparison to an intensive outpatient programme that consisted of an educational programme on substance abuse treatment.

Sacks 2011 consisted of a re-entry residential TC programme where participants worked in the community and saved money for independent living. This was compared to participants who were released to a community corrections facility during the day; they left the facility to go to work, receive treatment, and report to parole officers. This group engaged with brokering community-based services and directly received support and counselling services. A weekly relapse prevention group and daily medication monitoring were provided. Psychiatric and substance abuse services were provided by outside agencies (community parole officers helped clients choose). The Wexler study compared a TC treatment programme with aftercare in the community versus a waiting list control.

Mental health court

One study compared use of a mental health court and case management to treatment as usual (Cosden 2003). The mental health treatment court (MHTC) consisted of case management and assertive community treatment (ACT) provided via a case management model. This model included weekly or bi-weekly court supervision and frequent contact with case managers, followed by treatment as usual (if required), and compared this to treatment as usual, which included traditional court proceedings and county mental health services (Cosden 2003).

Motivational interviewing, mindfulness, and cognitive skills

Four studies compared motivational interviewing, mindfulness, and cognitive skills to no intervention (Lanza 2014), another intervention (Stein 2011), or treatment as usual (Cullen 2012; Malouf 2017). Stein 2011 was a manualised motivational intervention focused on empathy - not arguing and developing discrepancy; self-efficacy; and personal choice, and compared this approach to a relaxation intervention that included progressive muscle relaxation, use of guided imagery, and feedback on use of techniques.

Malouf 2017 used a manualised group intervention for jail inmates nearing release into the community. The intervention incorporated and adapted elements from several mindfulness-based interventions (MBIs), including acceptance and commitment therapy, mindfulness-based relapse prevention (MBRP), and dialectical behavioural therapy (DBT), and was compared to programmes that were normally available within the prison (e.g. anger management financial planning, health education).

Lanza 2014 used cognitive-behavioural therapy (CBT) to change behaviour through cognitive restructuring and compared to ACT, which aimed to construct an alternative context in which behaviour aligned with one's values is more likely to occur.

Multi-systemic therapy including families

Two studies compared multi-systemic therapy including families versus treatment as usual (in Sundell 2008) and another intervention (in Dakof 2015). Sundell 2008 compared an intensive family- and community-based treatment to support prosocial development versus individual counselling, family therapy, addiction treatment, and special education services.

Dakof 2015 compared an intervention that involved therapists who worked individually with each family in four areas of treatment (adolescent, parent, family, and community) versus adolescent group therapy based on cognitive-behavioural therapy and motivational interviewing.

Legal defence and social work

One study compared legal defence and wrap-around social work to legal defence service only (McCarter 2016). The wrap-around approach provides a collaborative and co-ordinated response of service providers that organises and streamlines service delivery. This includes attending any team meeting with or on behalf of youth, providing service referrals, and connecting families and guardians to local providers for appropriate mental health, substance abuse, and educational services and support. This was compared to provision of only legal defence service.

Interpersonal psychotherapy

One study compared interpersonal psychotherapy versus another intervention (Johnson 2012). Study participants in the intervention group received manualised group and individual sessions in prison for treatment of substance misuse and mental health problems. These approaches were compared to an attention-matched manualised in-prison and post-release psychoeducation course on mental health and drug problems.

Excluded studies

We excluded 224 full-text studies. (See Characteristics of excluded studies for further details.) Reasons for exclusion were lack of criminal justice involvement in referral to the intervention; lack of reporting of relevant drug or crime outcome measures, or both, at pre- and post-intervention periods; and allocation of participants to study groups that were not strictly randomised or did not contain original trial data.

Risk of bias in included studies

Allocation

Randomisation

All 13 studies were described as randomised. Nine of the included studies reported on how the randomisation sequence was generated and were judged as having low risk of bias (Cosden 2003; Dakof 2015; Johnson 2012; Lanza 2014; Malouf 2017; McCarter 2016; Sacks 2011; Stein 2011; Sundell 2008). The remaining four studies did not report how the randomisation sequence of participants was generated (Cullen 2012; Sacks 2004; Sacks 2008; Wexler 1999).

Characteristics at baseline

Eight of the 13 studies were similar in terms of drug use at baseline (Cullen 2012; Dakof 2015; Johnson 2012; McCarter 2016; Sacks 2008; Sacks 2011; Stein 2011; Wexler 1999); four studies were rated unclear (Cosden 2003; Lanza 2014; Malouf 2017; Sundell 2008); and one study showed comparable baseline differences (Sacks 2004). For similarity on criminal justice measures, nine studies were rated as similar (Cosden 2003; Cullen 2012; Dakof 2015; Johnson 2012; McCarter 2016; Sacks 2008; Sacks 2011; Sacks 2004; Wexler 1999), and four were rated as unclear (Lanza 2014; Malouf 2017; Stein 2011; Sundell 2008).

Allocation concealment

Of the 13 studies, only two adequately reported that the allocation process was concealed (Johnson 2012; Sundell 2008). The remaining 11 (85%) studies were rated as unclear.

Blinding

We assessed risk of detection bias across subjective and objective measures (see Appendix 12). We rated eight studies as having unclear risk (Cosden 2003; McCarter 2016; Sacks 2004; Sacks 2008; Sacks 2011; Stein 2011; Sundell 2008; Wexler 1999); two studies as having low risk (Cullen 2012; Lanza 2014); and the remaining three studies as having high risk of bias.

Incomplete outcome data

Loss to follow-up was reported to a differing extent in the included studies. We rated six studies as having low risk with limited attrition noted (Johnson 2012; Lanza 2014; Sacks 2004; Stein 2011; Sundell 2008; Wexler 1999); three studies as having unclear risk (Dakof 2015; Sacks 2008; Sacks 2011); and four studies as having high risk of bias (Cosden 2003; Cullen 2012; Malouf 2017; McCarter 2016).

Selective reporting

We rated five of the thirteen trials as having unclear risk of bias (McCarter 2016; Sacks 2004; Stein 2011; Sundell 2008; Wexler 1999); six studies as having low risk (Cosden 2003; Cullen 2012; Lanza 2014; Malouf 2017; Sacks 2008; Sacks 2011), and two studies as having high risk of bias (Dakof 2015; Johnson 2012).

See Figure 2 and Figure 3 for details.

Figure 2. Risk of bias graph: review authors' judgements about each risk of bias item presented as percentages across all included studies.

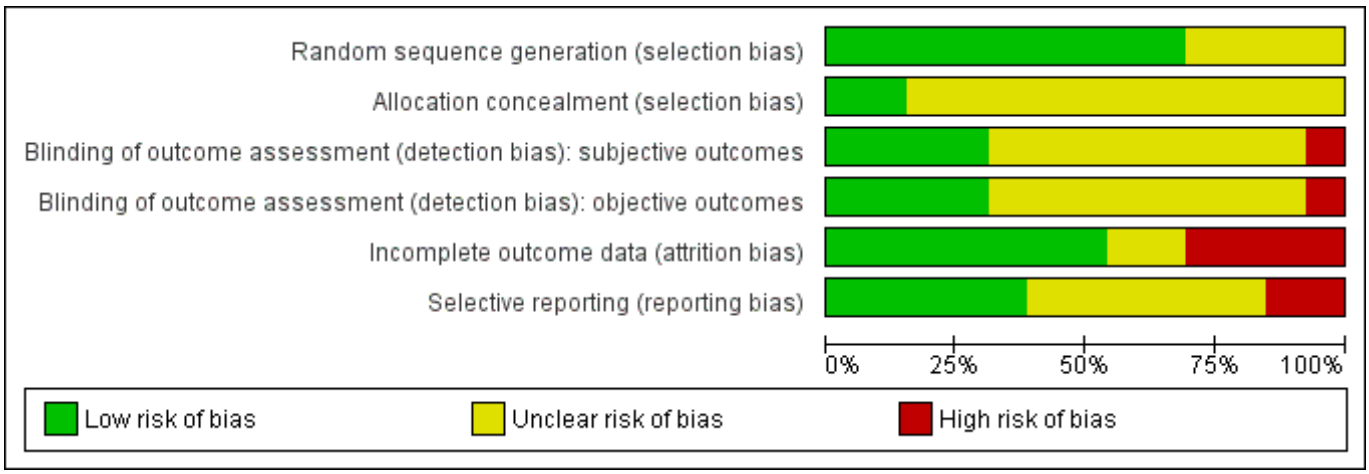


Figure 3. Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

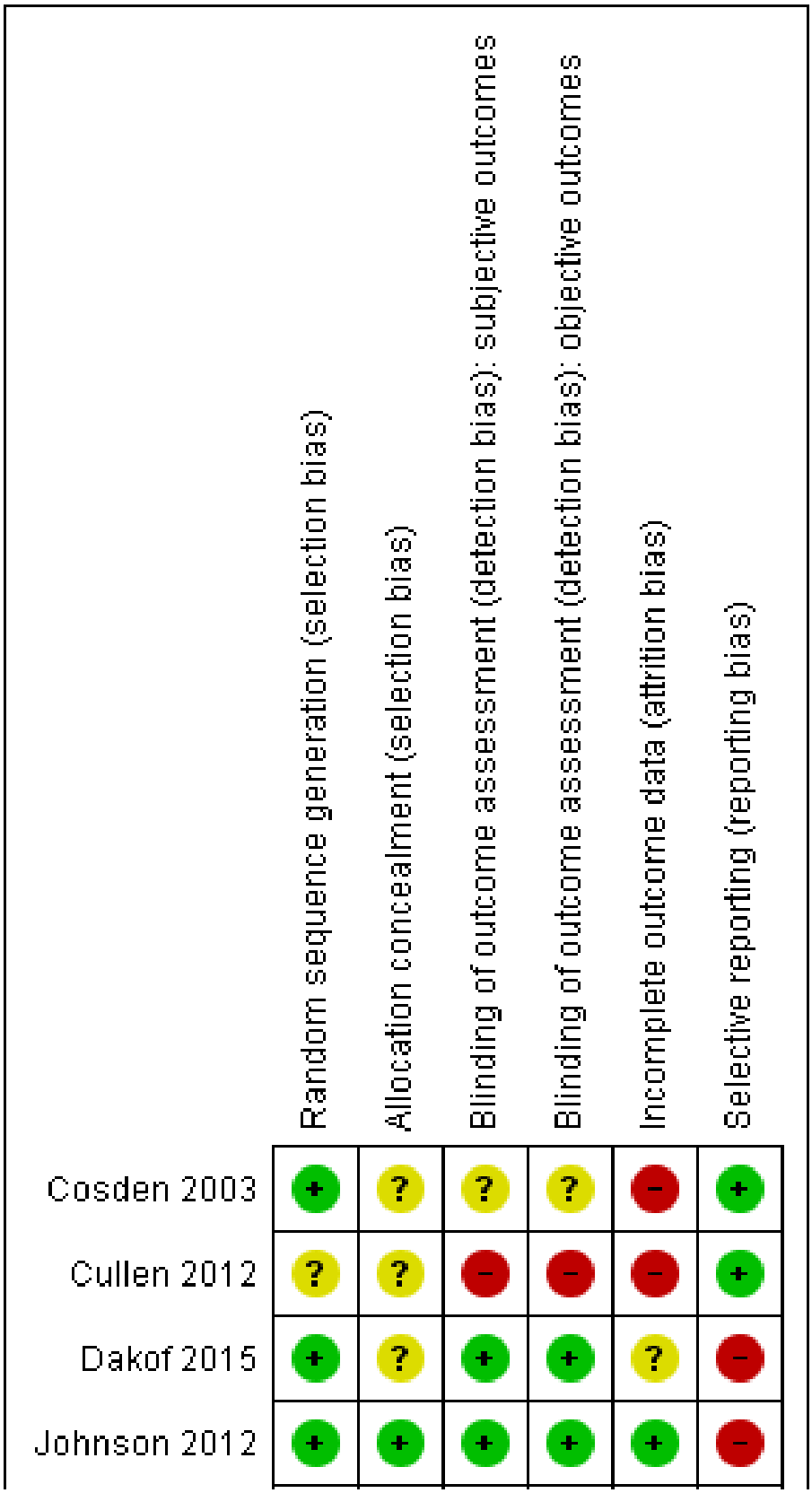
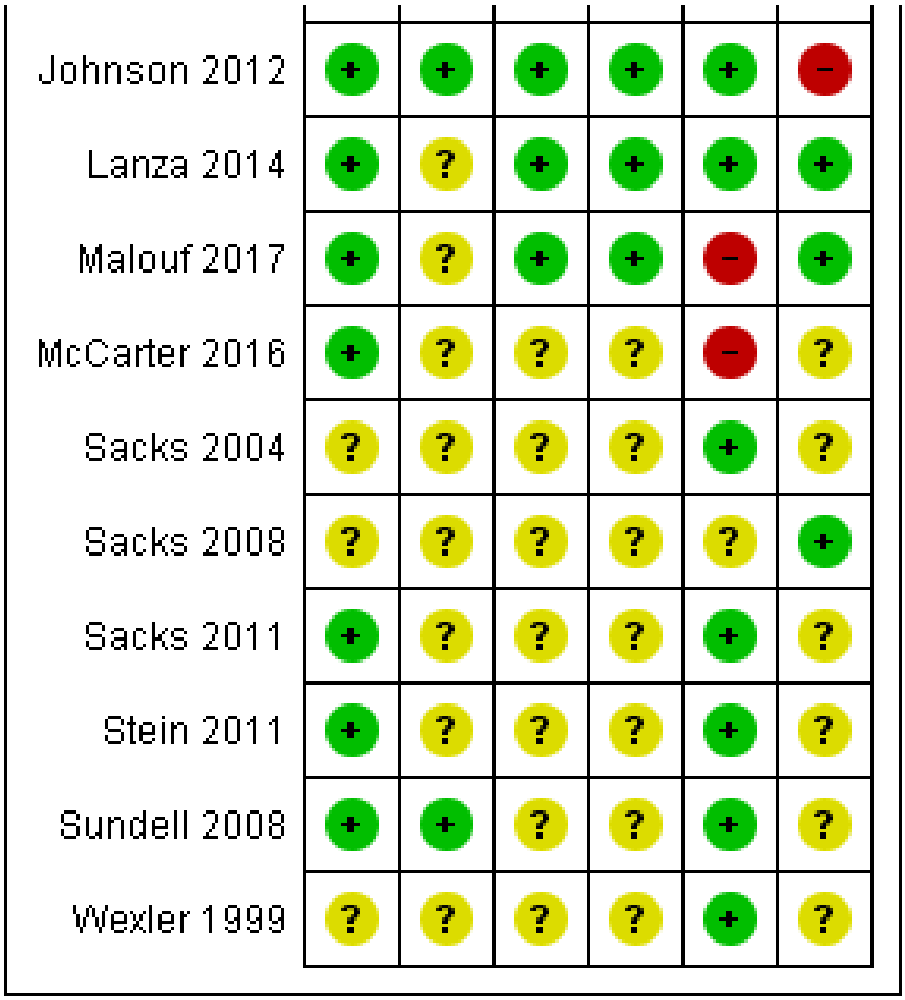


Figure 3. (Continued)



Effects of interventions

See: **Summary of findings for the main comparison** Therapeutic community compared to treatment as usual for drug-using offenders with co-occurring mental illness; **Summary of findings 2** Therapeutic community and aftercare compared to cognitive behavioural skills for drug using women offenders with co-occurring mental illness; **Summary of findings 3** Therapeutic community compared to waiting list control for drug-using offenders with co-occurring mental illness; **Summary of findings 4** Mental health treatment court with assertive case management model compared to treatment as usual for drug-using offenders with co-occurring mental illness; **Summary of findings 5** Motivational interviewing/mindfulness and cognitive skills compared to relaxation training for drug-using offenders with co-occurring mental illness; **Summary of findings 6** Motivational interviewing/mindfulness and cognitive skills compared to waiting list control for drug-using offenders with co-occurring mental illness; **Summary of findings 7** Motivational interviewing/mindfulness and cognitive skills compared to treatment as usual for drug-using offenders with co-occurring mental illness; **Summary of findings 8** Multi-systemic therapy involving family and juveniles compared to treatment as usual for drug-using offenders with co-occurring mental illness; **Summary of findings 9** Multi-systemic therapy involving family compared to group substance abuse therapy for drug-using adolescents with co-occurring mental illness; **Summary of findings 10** Interpersonal psychotherapy compared to a psychoeducational intervention for drug-using offenders with co-occurring mental illness; **Summary of findings 11** Legal defence service and wrap-around social work services compared to legal defence service only for drug-using offenders with co-occurring mental illness

1. Therapeutic community and aftercare versus treatment as usual

See Summary of findings for the main comparison.

Impact on self-reported drug use

This was not reported.

Impact on self-reported criminal activity

Sacks 2011 and Sacks 2004 were combined to show a significant reduction in the number of re-arrests (risk ratio (RR) 0.67, 95% confidence interval (CI) 0.53 to 0.84) and re-incarcerations (RR 0.40, 95% CI 0.24 to 0.67), with moderate-certainty evidence at 12-month follow-up (266 participants; see Analysis 1.1).

2. Therapeutic community and aftercare versus cognitive-behavioural skills for drug-using women

See Summary of findings 2.

Impact on self-reported drug use

Sacks 2008 showed no significant reduction in self-reported drug use (RR 0.78, 95% CI 0.46 to 1.32), with low-certainty evidence at six-month follow-up (314 participants; see Analysis 2.1).

Impact on self-reported criminal activity

Sacks 2008 showed no significant reduction in re-arrest for any type of crime (RR 0.69, 95% CI 0.44 to 1.09), criminal activity (RR 0.74, 95% CI 0.52 to 1.05), or drug-related crime (RR 0.87, 95% CI 0.56 to 1.36), with low-certainty evidence at six-month follow-up (314 participants; see Analysis 2.2, Analysis 2.3, and Analysis 2.4).

3. Therapeutic community versus waiting list control

See Summary of findings 3.

Impact on self-reported drug use

This was not reported.

Impact on self-reported criminal activity

Wexler 1999 showed a significant reduction (but a trend towards favouring) return to prison in favour of the therapeutic community intervention (RR 0.60, 95% CI 0.46 to 0.79), with moderate-certainty evidence at 36-month follow-up (478 participants; see Analysis 3.1).

4. Mental health treatment court with assertive case management model versus treatment as usual

See Summary of findings 4.

Impact on self-reported drug use

Cosden 2003 showed no significant reduction in Addiction Severity Index (ASI)-self-reported drug use (mean difference (MD) 0.00, 95% CI -0.03 to 0.03), with low-certainty evidence at 12-month follow-up (235 participants; see Analysis 4.3).

Impact on self-reported criminal activity

Cosden 2003 showed no significant reduction in conviction for a new crime (RR 1.05, 95% CI 0.90 to 1.22) or re-incarceration to jail (RR 0.79, 95% CI 0.62 to 1.01), with low-certainty evidence at 12-month follow-up (235 participants; see Analysis 4.1 and Analysis 4.2).

5. Motivational interviewing/mindfulness and cognitive skills versus relaxation therapy

See Summary of findings 5.

Impact on self-reported drug use

Stein 2011 compared cognitive skills to a relaxation training intervention for adolescents in prison with depressed mood. This study measured marijuana use at three-month follow-up assessment using the Risks and Consequences Questionnaire (RCQ). Researchers reported a main effect < .007, with participants in the motivational interviewing group showing fewer problems than participants in the relaxation training group. No further numerical information is available (moderate-certainty of evidence; 181 participants).

Impact on self-reported criminal activity

This was not reported.

6. Motivational interviewing/mindfulness and cognitive skills versus waiting list control

See Summary of findings 6.

Impact on self-reported drug use

Lanza 2014 reported no significant reduction in self-reported drug use based on the ASI (MD -0.04, 95% CI -0.37 to 0.29) and abstinence from drug use (RR 2.89, 95% CI 0.73 to 11.43), with low-certainty ev-

idence at six months (31 participants; see Analysis 5.1 and Analysis 5.2).

Impact on self-reported criminal activity

Studies did not assess this outcome.

7. Motivational interviewing/mindfulness and cognitive skills versus treatment as usual

See Summary of findings 7.

Impact on self-reported drug use

Malouf 2017 found no significant reduction in frequency of marijuana use (MD -1.05, 95% CI -2.39 to 0.29), with very low-certainty evidence at three months post release (40 participants; see Analysis 6.1).

Cullen 2012 found no significant reduction in positive drug screens (MD -0.7, 95% CI -3.5 to 2.1), with very low-certainty evidence at 12 months (84 participants; see Analysis 6.4).

Impact on self-reported criminal activity

Malouf 2017 found a significant reduction in frequency of re-arrest (MD -0.66, 95% CI -1.31 to -0.01) but not in time to first arrest (MD 0.87, 95% CI -0.12 to 1.86), with very low-certainty evidence up to 36 months (40 participants; see Analysis 6.2 and Analysis 6.3).

8. Multi-systemic therapy (involving family) and juveniles versus treatment as usual

See Summary of findings 8.

Impact on self-reported drug use

Sundell 2008 found no significant reduction in drug dependence on the Drug Use Disorders Identification Test (DUDIT) score (MD -0.22, 95% CI -2.51 to 2.07), with low-certainty evidence up to seven months (156 participants; see Analysis 7.2).

Impact on self-reported criminal activity

Sundell 2008 found no significant reduction in arrests (RR 0.97, 95% CI 0.70 to 1.36), with low-certainty evidence up to seven months (158 participants; see Analysis 7.1).

9. Multi-systemic therapy (involving family) versus adolescent group substance abuse therapy

See Summary of findings 9.

Impact on self-reported drug use

This was not reported.

Impact on self-reported criminal activity

Dakof 2015 reported no significant reduction in re-arrests (MD -0.24, 95% CI -0.76 to 0.28), with low-certainty evidence up to 24 months (112 participants; see Analysis 8.1).

10. Interpersonal psychotherapy versus a psychoeducational intervention

See Summary of findings 10.

Impact on self-reported drug use

Johnson 2012 reported no significant reduction in self-reported drug use (RR 0.67, 95% CI 0.30 to 1.50), with very low-certainty evidence up to three months (38 participants; see Analysis 9.1).

Impact on self-reported criminal activity

This was not reported.

11. Legal defence service and wrap-around social work services versus legal defence service only

See Summary of findings 11.

Impact on self-reported drug use

This was not reported.

Impact on self-reported criminal activity

McCarter 2016 reported no significant reduction in the number of new offences committed (RR 0.64, 95% CI 0.07 to 6.01), with very low-certainty evidence up to 12 months (29 participants; Analysis 10.1).

DISCUSSION

Summary of main results

This systematic review provides evidence from 13 trials involving 2606 participants and evaluating 11 different comparisons; one pooled analysis was possible. Certainty of evidence was generally low. Most interventions were delivered in prison-based (eight studies; 61%), court (two studies; 15%), community (two studies; 15%), or medium secure hospital (one study; 8%) settings. Most studies compared an intervention versus treatment as usual or another intervention (11/13 studies; 84%).

The 11 different treatment comparisons were divided into:

- therapeutic community and aftercare versus treatment as usual (Sacks 2004; Sacks 2011);
- therapeutic community and aftercare versus a cognitive-behavioural skills course (Sacks 2008); and
- therapeutic community and aftercare versus a waiting list control (Wexler 1999).

Two studies comparing therapeutic community interventions reported a significant reduction in subsequent re-incarceration and criminal activity compared to treatment as usual (Sacks 2004; Sacks 2011), with moderate-certainty evidence. Sacks 2008 adapted a therapeutic community treatment for women offenders compared to a cognitive-behavioural skills course. This study compared women assigned to therapeutic community treatment or standard treatment versus a cognitive-behavioural recovery and relapse prevention curriculum, referred to in the system as the 'intensive outpatient programme' (Sacks 2008), with low-certainty evidence. At six months, researchers found that *both* groups improved significantly on variables of mental health, substance use, criminal behaviour, and HIV risk. Study authors noted that further exploration of each model for different offender groups is required to permit more precise utility of each model. They concluded that these preliminary findings suggest the importance of providing gender-specific sensitive and comprehensive approaches within the correctional system to respond to the complex substance abuse needs of

female offenders (Sacks 2008). Therapeutic community treatment was found to be more beneficial than cognitive-behavioural therapy, lengthening time spent in the community before subsequent re-incarceration (Sacks 2008). This finding partially supports previous research suggesting that the combination of therapeutic community treatment and aftercare release seems to produce the most consistent and successful results among offenders who do not have co-occurring mental health problems (Mitchell 2012a). Although this is not addressed within this review, clients who remained in treatment for the longest period appeared to benefit the most (Sacks 2004). These differences seem to be borne out for up to 36 months when compared to people who received nothing, suggesting that over time, the impact of the intervention eventually became dissipated (Wexler 1999), with moderate-certainty evidence. Only one of the four studies reported on outcomes of drug use (in women) and found no reductions following the intervention in comparison to attending a cognitive skills course (Sacks 2008). We do not know whether drug use is reduced in men with co-occurring mental health problems.

Mental health treatment court (MHTC) and use of an assertive case management model versus treatment as usual

People under the care of the criminal justice system in *both* groups showed improvement across a range of outcomes in life satisfaction, a decrease in distress levels, and improvement in independent living. Overall, the pattern of criminal activity suggested that both groups spent time in jail but for different reasons. The individual under the care of the MHTC was more likely to be 'booked' for a crime and not convicted and to have more convictions due to probation violation in comparison to individuals who had received only treatment as usual. Those people receiving treatment as usual were more likely to be convicted of a new offence (Cosden 2003), with low-certainty evidence.

Motivational interviewing/mindfulness and cognitive skills versus a waiting list control; motivational interviewing/ mindfulness and cognitive skills versus relaxation training; motivational interviewing/mindfulness and cognitive skills versus treatment as usual

See Cullen 2012, Lanza 2014, Malouf 2017, and Stein 2011.

Four studies of motivational interviewing/mindfulness and cognitive skills compared to a waiting list control, relaxation training, and treatment as usual reported moderate- to very low-certainty evidence. No significant differences were noted across these studies, suggesting that use of such skills may not reduce subsequent drug use and/or criminal activity in comparison to any of the alternatives. In addition, one of the four studies was a pilot randomised controlled trial (RCT) of motivational interviewing versus treatment as usual, which suggests that larger studies are required to support any future findings. Use of self-reported measures often contaminated by social desirability bias means that confidence in these results may be limited (moderate-certainty evidence; Malouf 2017).

Multi-systemic therapy (MST) involving families versus treatment as usual; MST involving families versus group-based substance abuse therapy

Two studies of multi-systemic therapy for juveniles included families and compared treatment as usual or an alternative group-based substance abuse therapy (Dakof 2015; Sundell 2008). Findings show that MST did not support short-term effectiveness relative to services usually available for conduct disordered youths in Sweden (Sundell 2008). This outcome is contrary to other work conducted in the United States and Norway but similar to work performed in Canada (Cunningham 2002). Sundell 2008 highlighted the importance of measuring and monitoring fidelity during transportation and delivery of interventions to other settings and different countries worldwide; the importance of the impact of social context should not be underestimated (low-certainty evidence).

Interpersonal psychotherapy versus psychoeducational intervention

One pilot study of interpersonal psychotherapy in comparison to a psychoeducational intervention showed no significant reduction in subsequent drug use. However, these results should be interpreted with caution, given the small sample and the short follow-up period (very low-certainty evidence; Johnson 2012).

Legal defence work and wrap-around social services versus legal defence work only

One pilot study of legal defence work and wrap-around social services in comparison to legal defence work with juveniles did not reveal any significant reduction in subsequent return to prison in the 12-month follow-up period. Study authors argue that holistic representation services can help to provide protective factors that might strengthen underlying risks and needs of young people, which might contribute to additional court involvement and/or re-offending in the future (very low-certainty evidence; McCarter 2016).

Succesful treatment elements and dealing with complex co-occurring problems

In terms of addressing some of the complex issues of individuals with mental health problems and co-occurring substance abuse, the evidence from this systematic review provides sparse information.

Several successful treatment elements were reported throughout these trials, and several key themes can be identified.

First, we noted that the issue of treatment engagement was important. In the mental health court trial, informal support from family and friends encouraged the engagement of clients within the community to longer-term gain, but more research is required to assess whether interventions that empower families can enhance and sustain outcomes longer than non-family-based interventions (Cosden 2003; Dakof 2015).

Second, programmes that were specifically adapted to the needs of mental health clients tended to include a cognitive-behavioural curriculum that emphasised criminal thinking and behaviour alongside psychoeducational classes. The purpose of combining these two types of mechanisms is to enhance an individual's ability to recognise and understand his/her substance misuse and mental health problems in greater detail (Sacks 2004).

Third, the longer an individual is engaged in treatment, the better is the outcome(s) (Wexler 1999).

Overall completeness and applicability of evidence

General applicability

Applicability of the evidence is hindered in general by the range of trials covering various different treatment options, making it inappropriate to pool study results. Most trials were conducted within the US judicial system; therefore, they are limited in their generalisability to criminal justice systems outside the United States. Three trials conducted in Spain (Lanza 2014), the United Kingdom (Cullen 2012), and Sweden provide a European perspective but with moderate-certainty evidence (Sundell 2008). As a result, study findings must be interpreted with caution.

Mental health information

Although this review specifically sought to identify studies including participants with co-occurring mental health problems, study descriptions of mental ill health varied (see Table 1). Cosden 2003 used a psychiatrist or a psychologist to conduct a clinical interview to determine a mental health diagnosis alongside substance misuse. This resulted in a mental health court sample of individuals diagnosed with various mental health problems, including mood disorder, schizophrenia, bipolar disorder, and dual diagnosis. Other papers referred to use of *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* diagnostic criteria, akin to the Youth Self-Report measure (Dakof 2015; McCarter 2016; Sacks 2011; Sundell 2008), but subsequently provided little information with regards to individual mental health needs. Demographic information in Sacks 2004 revealed other aspects of mental health prognosis, including lifetime mental health treatment, lifetime patient care, and prescribed medication.

The Wexler 1999 series of studies reported a range of diagnoses, including antisocial personality disorder, phobias, post-traumatic stress disorder, depression, dysthymia, and attention deficit disorder, but did not describe how these diagnoses were confirmed or assessed within the population.

Six of the 13 trials reported on change in mental health well-being. Three trials reported on use of the Beck Depression Inventory, the Global Severity Index, and the Posttraumatic Diagnostic Scale (Sacks 2004; Sacks 2008; Sacks 2011). Another study reported on depression but used the Hamilton Rating Scale for Depression (Johnson 2012). Four studies reported the presence of mood disorder alongside schizophrenia, general anxiety disorder, and/or antisocial personality disorder (Cosden 2003; Cullen 2012; Lanza 2014; Malouf 2017). Four studies discussed differential effects of treatment on the severity of depression (Cosden 2003; Johnson 2012; McCarter 2016; Stein 2011). Cosden 2003 noted that further understanding of how to help clients with serious mental health problems through different levels of treatment is needed. Johnson 2012 noted that participants undergoing interpersonal psychotherapy had significantly reduced levels of depression and substance misuse over attention-matched controls. Study authors noted that the intensity of treatment delivered once the individual is released into the community is key to maintaining good outcomes. However, they go on to state that people under the care of the criminal justice system often experience delays in treatment and service provision on release, and they suggest that alternative services such as phone treatment might be helpful in providing more intensive and useful post-release treatment in times of crisis.

Quality of the evidence

We rated eight of 13 (62%) studies as having unclear risk of bias in more than four of eight domains. The main limiting factor was lack of reporting evidence, which prevented review authors from making a clear judgement on bias. Given that the imprecision of reporting lowers the quality of evidence, further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. In addition, several specific limitations related to study design (and leading to problems of selection bias) were described, and sample sizes were small. Stein 2011 and Cullen 2012 were noted as being relatively underpowered. Replication of these studies is required to enhance the generalisability and external validity of study findings.

Similar modest sample sizes were reported, with some trials referred to as pilot studies (e.g. Malouf 2017; McCarter 2016). Sacks 2011 and Cosden 2003 suggest that larger samples should be used to provide a more precise estimate of effect. Small sample sizes limit the generalisability of the sample population to other settings, and few studies collected longitudinal data sufficient to support the ongoing use of such schemes without additional larger trials commissioned (Cullen 2012; Dakof 2015; McCarter 2016). Cosden 2003 also reported on the possibility of outcome bias, as the interviewer was not blind to the outcome condition of the participant nor to loss to follow-up (25% of the study sample were lost to follow-up) at 12 months.

Another possible selection bias concern in the series of Wexler studies was that participants were randomly assigned to prison therapeutic community treatment and regular prison conditions but not to aftercare (Prendergast 2003; Prendergast 2004; Wexler 1999). Study authors noted that possible differences in personal motivation may account for some of the positive outcomes associated with participants' continued support for aftercare services. Subsequently, these participants were noted as having the highest 'readiness scores', which suggests that motivation creates an important consideration for client selection (Wexler 1999). Cullen 2012 reported on the use of randomisation within sites, which may have led to contamination across treatment groups, and the likelihood that further selection bias might have arisen from the fact that declining patients were more unwell and/or antisocial, and that these factors might influence treatment outcomes (Cullen 2012).

Overall we judged the certainty of evidence as moderate to very low for all included interventions.

Potential biases in the review process

Besides the limitations already discussed, the search method was limited to databases that could be accessed via the University of York, and extensive website searches were not conducted. We did not search specific trial registers. As a result, some literature may have been omitted from this updated version.

AUTHORS' CONCLUSIONS

Implications for practice

This review provides moderate- to very low-certainty evidence suggesting that use of therapeutic interventions might reduce subsequent criminal activity compared to control interventions such as treatment as usual, an alternative intervention, or nothing. Mental health treatment courts may reduce the number of subsequent

new crimes committed in comparison to treatment as usual. We do not have sufficient evidence to support whether these interventions are effective for both men and women involved in the criminal justice system, and evidence is insufficient to permit any judgements about differential effectiveness among different ethnic groups. Longer or more intensive interventions appear to have some effect on improving outcomes but perhaps only up until a particular time point. A further challenge in this field is the very wide range of outcome measures, which are reported over greatly varying periods of time. We identified too few trials reporting many of these outcome measures to provide sufficient statistical power to detect potentially small effects.

Implications for research

We have identified several research implications.

- Good quality research is required to evaluate the effectiveness of interventions for offenders with substance misuse problems and co-occurring mental health problems. Of particular interest are the extended long-term effects of aftercare and the level of contact required with services in the community. Further research to explore the intensity of different community treatment alternatives following release may help to unravel this process.
- Better descriptions of participants' mental health problems and more detailed information about mental health diagnoses are required to enable the transferability of information to clinical practice. Such information could also facilitate the use of mental health diagnoses as a moderator within analysis of these outcomes.
- Trial interventions specifically focusing on females and adolescents are required. In the current review, two studies focused only on females, and three studies reported on outcomes with youth involved in the criminal justice system.
- Little is known about the interaction between mental health problems, individual personal characteristics, and positive outcomes related to treatment success. In terms of depression, Stein 2011 attempted to explore some of the differences between participants with few and with many depressive symptoms. Future studies should consider an analysis of existing data sets that might reveal which individuals with which mental health diagnoses fare better than others. This would reveal who might potentially benefit most from treatment and would enable appropriate targeting of resources.

ACKNOWLEDGEMENTS

We would like to acknowledge the help of the York Health Economics Consortium and The Health Sciences Department at the University of York, and the continued support of the Cochrane Drugs and Alcohol Group.

REFERENCES

References to studies included in this review

Cosden 2003 *{published data only}*

Cosden M, Ellens JK, Schnell JL, Yamini-Diouf Y, Wolfe MM. Evaluation of a mental health treatment court with assertive community treatment. *Behavioral Sciences and the Law* 2003;**21**(4):415-27.

Cullen 2012 *{published data only}*

Cullen AE, Clarke AY, Kuipers E, Hodgins S, Dean K, Fahy T. A multisite randomized trial of a cognitive skills program for male mentally disordered offenders: violence and antisocial behavior outcomes. *Journal of Consulting and Clinical Psychology* 2012;**80**(6):1114-20.

Dakof 2015 *{published data only}*

Dakof GA, Henderson CE, Rowe CL, Boustani M, Greenbaum PE, Wang W, et al. A randomized clinical trial of family therapy in juvenile drug court. *Journal of Family Psychology* 2015;**29**(2):232-41.

Johnson 2012 *{published data only}*

Johnson JE, Zlotnick C. Pilot study of treatment for major depression among women prisoners with substance use disorder. *Journal of Psychiatric Research* 2012;**46**(9):1174-83. [DOI: 10.1016/j.jpsychires.2012.05.007]

Lanza 2014 *{published data only}*

Gonzalez-Menendez A, Fernandez P, Rodriguez F, Villagra P. Long-term outcomes of acceptance and commitment therapy in drug dependent female inmates: a randomised controlled trial. *Journal of Clinical and Health Psychology* 2014;**14**:18-27.

* Lanza PV, Garcia PF, Lamelas FR, Gonzalez-Menendez A. Acceptance and commitment therapy versus cognitive behavioral therapy in the treatment of substance use disorder with incarcerated women. *Journal of Clinical Psychology* 2014;**70**(7):644-57. [DOI: 10.1002/jcip.22060]

Lanza PV, Gonzalez-Menendez A. Acceptance and commitment therapy for drug abuse in incarcerated women. *Psicothema* 2013;**25**(3):307-12.

Malouf 2017 *{published data only}*

Malouf ET, Youman K, Steuewig J, Witt EA, Tangney JP. A pilot RCT of a values-based mindfulness group intervention with jail inmates: evidence for reduction in post-release risk behaviour. *Mindfulness* 2017;**8**(3):603-14.

McCarter 2016 *{published data only}*

McCarter SA. Holistic representation: a randomized pilot study of wraparound services for first-time juvenile offenders to improve functioning, decrease motions for review, and lower recidivism. *Family Court Review* 2016;**54**(2):250-60.

Sacks 2004 *{published data only}*

* Sacks S, Sacks JY, McKendrick K, Banks S, Stommel J. Modified TC for MICA inmates in correctional settings: crime outcomes. *Behavioural Sciences and the Law* 2004;**22**(4):477-501.

Sullivan CJ, McKendrick K, Sacks S, Banks S. Modified therapeutic community treatment for offenders with MICA disorders: substance use outcomes. American Journal of Drug and Alcohol Abuse 2007; Vol. 33, issue 6:823-32. [0095-2990: (Print)]

Sacks 2008 *{published data only}*

Sacks JY, McKendrick K, Hamilton ZK. A randomized clinical trial of a therapeutic community treatment for female inmates: outcomes at 6 and 12 months after prison release. *Journal of Addictive Diseases* 2012;**31**(3):258-69.

* Sacks JY, Sacks S, McKendrick K, Banks S, Schoeneberger M, Hamilton Z, et al. Prison therapeutic community treatment for female offenders: profiles and preliminary findings for mental health and other variables (crime, substance use and HIV risk). *Journal of Offender Rehabilitation* 2008;**46**(3-4):233-61. [1050-9674]

Sacks 2011 *{published data only}*

Sacks S, Chaple M, Sacks JY, McKendrick K, Cleland CM. Randomized trial of a reentry modified therapeutic community for offenders with co-occurring disorders: crime outcomes. *Journal of Substance Abuse Treatment* 2011;**23**(12):1676-86.

Stein 2011 *{published data only}*

Stein LA, Lebeau R, Colby SM, Barnett NP, Golembeske C, Monti PM. Motivational interviewing for incarcerated adolescents: effects of depressive symptoms on reducing alcohol and marijuana use after release. *Journal of Studies on Alcohol and Drugs* 2011;**72**(3):497-506.

Sundell 2008 *{published data only}*

Sundell K, Hansson K, Lofholm CA, Olsson T, Gustle LH, Kadesjo C. The transportability of multisystemic therapy to Sweden: short-term results from a randomized trial of conduct disordered youth.. *Journal of Family Psychology* 2008;**22**(3):550-60.

Wexler 1999 *{published data only}*

Prendergast ML, Hall EA, Wexler HK. Multiple measures of outcome in assessing a prison-based drug treatment program. *Journal of Offender Rehabilitation* 2003;**37**:65-94.

Prendergast ML, Hall EA, Wexler HK, Melnick G, Cao Y. Amity prison-based therapeutic community: 5-year outcomes. *Prison Journal* 2004;**84**(1):36-50.

* Wexler HK, DeLeon G, Thomas G, Kressel D, Peters J. The Amity prison TC evaluation - re incarceration outcomes. *Criminal Justice and Behavior* 1999a;**26**(2):147-67.

Wexler HK, Melnick G, Lowe L, Peters J. Three-year re incarceration outcomes for Amity in-prison therapeutic community and aftercare in California. *Prison Journal* 1999b;**79**(3):321-36.

References to studies excluded from this review

Alemagno 2009 *{published data only}*

Alemagno SA, Stephens RC, Stephens P, Shaffer-King P, White P. Brief motivational intervention to reduce HIV risk and to increase HIV testing among offenders under community supervision. *Journal of Correctional Health Care* 2009;**15**(3):210-21.

Alemi 2010 *{published data only}*

Alemi F, Haack M, Nemes S, Harge A, Baghi H. Impact of online counseling on drug use: a pilot study. *Quality Management in Healthcare* 2010;**19**(1):62-9.

Allen 2017 *{published data only}*

Allen AA, Chen DT, Bonnie RJ, Ko Tomohiro M, Suratt CE, Lee JD, et al. Assessing informed consent in an opioid relapse prevention study with adults under current or recent criminal justice supervision. *Journal of Substance Abuse Treatment* 2017;**81**:66-72.

Althoff 2013 *{published data only}*

Althoff AL, Zelenev A, Meyer JP, Fu J, Brown SE, Vagenas P, et al. Correlates of retention in HIV care after release from jail: results from a multi-site study. *AIDS and Behaviour* 2013;**17**:S156-70.

Anonymous 1989 *{published data only}*

Anonymous. National study of drug abuse treatment finds benefits include less drug use, fewer crimes. *Hospital and Community Psychiatry* 1989;**40**(12):1309-10.

Anonymous 2004 *{published data only}*

Anonymous. Auricular acupuncture for drug use in prison inmates (n=163). *Acupuncture in Medicine* 2004;**22**(4):223.

Anonymous 2014 *{published data only}*

Anonymous. Abstracts from the 2014 Annual Meeting of the College on Problems of Drug Dependence. Drug and Alcohol Dependence Conference. 2014; Vol. 146, issue no pagination.

Anonymous 2015 *{published data only}*

Anonymous. Strategy and action plan on dementia in older people. Washington D.C: Pan American Health Organization, 2015.

Anonymous 2015a *{published data only}*

Anonymous. Study recommends continuing methadone in prison and jail. *Alcoholism & Drug Abuse Weekly* 2015;**27**(23):3-5.

Anonymous 2016 *{published data only}*

Anonymous. 12th Congress of European Opiate Addiction Treatment Association, EUROPAD 2016. Heroin Addiction and Related Clinical Problems. Conference. 2016; Vol. 18, issue 3 Supplement 1.

Anonymous 2016a *{published data only}*

Anonymous. A test of core psychopathic traits as a moderator of the efficacy of a brief motivational intervention for substance-using offenders: correction to Swogger et al. (2016). *Journal of Consulting and Clinical Psychology* 2016;**84**(3):210.

Anonymous 2016b *{published data only}*

Anonymous. Extended-release naltrexone reduces opioid relapse in justice population. *Brown University Psychopharmacology Update* 2016;**7**:1-5. [DOI: 10.1002/pu.30151]

Bailey 1994 *{published data only}*

Bailey RC, Berg D. The behavioral and attitudinal modification project (BAM): a failed experiment using a classical experimental research design in a closed institutional setting for drug addicts. *International Journal of the Addictions* 1994;**29**(10):1315-45.

Barrett 2015 *{published data only}*

Barrett EL, Indig D, Sunjic S, Sannibale C, Sindicich N, Rosenfeld J, et al. Treating comorbid substance use and traumatic stress among male prisoners: a pilot study of the acceptability, feasibility, and preliminary efficacy of seeking safety. *International Journal of Forensic Mental Health* 2015;**14**(1):45-55.

Bartlett 2015 *{published data only}*

Bartlett A, Jhanji E, White S, Harty MA, Scammell J, Allen S. Interventions with women offenders: a systematic review and meta-analysis of mental health gain. *Journal of Forensic Psychiatry and Psychology* 2015;**26**(2):133.

Bawor 2014 *{published data only}*

Bawor M, Dennis BB, Anglin R, Steiner M, Thabane L, Samaan Z. Sex differences in outcomes of methadone maintenance treatment for opioid addiction: a systematic review protocol. *Syst* 2014;**3**:45.

Bazazi 2017 *{published data only}*

Bazazi AR, Wickersham JA, Wegman MP, Culbert GJ, Pillai V, Shrestha R, et al. Design and implementation of a factorial randomized controlled trial of methadone maintenance therapy and an evidence-based behavioral intervention for incarcerated people living with HIV and opioid dependence in Malaysia. *Contemporary Clinical Trials* 2017;**59**:1-12.

Berman 2004 *{published data only}*

Berman AH, Lundberg U, Krook AL, Gyllenhammar C. Treating drug using prison inmates with auricular acupuncture: a randomized controlled trial. *Journal of Substance Abuse Treatment* 2004;**26**(2):95-102.

Bermudez 2014 *{published data only}*

Bermudez Jorge AZ par, Oliveira Maria Auxiliadora par, Luiza Vera Lucia par, Giovanella L 'edgia par, Escorel Sarah par, Lobato Lenaura de Vasconcelos Costa par, et al. Assist\'eancia farmac \'eautica^ipt\par. Rio de Janeiro\par: Editora Fiocruz\par, 2014:657\par-85\par.

Brahen 1976 *{published data only}*

Brahen L, Wiechert V, Capone T. Narcotic antagonist treatment of the criminal justice patient - institutional vs outpatient - including a 24 hour detox naltrexone induction regimen with oral medication. *NIDA Research Monograph* 1976, (9):93-8.

Brodie 2009 *{published data only}*

Brodie JD, Case BG, Figueroa E, Dewey SL, Robinson JA, Wanderling JA, et al. Randomized, double-blind, placebo-controlled trial of vigabatrin for the treatment of cocaine dependence in Mexican parolees. *American Journal of Psychiatry* 2009;**166**(11):1269-77.

Brovko 2017 *{published data only}*

Brovko JM. Increasing sexual offenders' motivation to engage in mandated substance abuse treatment: a brief motivational intervention. *Dissertation Abstracts International Section B: The Sciences and Engineering* 2017;**78**(3-B(E)):No Pagination Specified.

Brown 2013 *{published data only}*

Brown R, Gassman M, Hetzel S, Berger L. Community-based treatment for opioid dependent offenders: a pilot study. *American Journal of Addiction* 2013;**22**(5):500-2.

Brown 2014 *{published data only}*

Brown R. Judging addicts: drug courts and coercion in the justice system. *Addiction* 2014;**109**(5):855.

Burraston 2014 *{published data only}*

Burraston BO, Bahr SJ, Cherrington DJ. Reducing juvenile delinquency with automated cell phone calls. *International Journal of Offender Therapy and Comparative Criminology* 2014;**58**(5):522-36.

Bustos 2016 *{published data only}*

Bustos Y, Harvey R, Jason LA. Important activities among justice-involved individuals with substance use disorders in posttreatment aftercare settings. *Alcholism Treatment Quarterly* 2016;**34**(4):415-24.

Calcaterra 2014 *{published data only}*

Calcaterra S, Mueller S, Beatty B, Binswanger IA. The role of social support in drug and alcohol use among former prison inmates. *Substance Abuse* 2014;**35**(2):214.

Calsyn 2005 *{published data only}*

Calsyn RJ, Yonker RD, Lemming MR, Morse GA, Klinkenberg WD. Impact of assertive community treatment and client characteristics on criminal justice outcomes in dual disorder homeless individuals. *Criminal Behaviour and Mental Health* 2005;**15**(4):236-48.

Carrieri 2017 *{published data only}*

Carrieri P, Vilotitch A, Nordmann S, Lions C, Michel L, Mora M, et al. Decrease in self-reported offences and incarceration rates during methadone treatment: a comparison between patients switching from buprenorphine to methadone and maintenance treatment incident users (ANRS-Methaville trial). *International Journal of Drug Policy* 2017;**39**:86-91. [DOI: 10.1016/j.drugpo.2016.08.005]

Carroll 2006 *{published data only}*

Carroll KM, Easton CJ, Nich C, Hunkele KA, Neavins TM, Sinha R, et al. The use of contingency management and motivational/skills-building therapy to treat young adults with marijuana dependence. *Journal of Consulting and Clinical Psychology* 2006;**74**(5):955-66.

Carroll 2012 *{published data only}*

Carroll KM, Nich C, Lapaglia DM, Peters EN, Easton CJ, Petry NM. Combining cognitive behavioral therapy and contingency management to enhance their effects in treating cannabis dependence: less can be more, more or less. *Addiction* 2012;**107**(9):1650-9.

Chandler 2016 *{published data only}*

Chandler RK, Finger MS, Farabee D, Schwartz RP, Condon T, Dunlap LJ, et al. The SOMATICS collaborative: introduction to a National Institute on Drug Abuse cooperative study of pharmacotherapy for opioid treatment in criminal justice settings. *Contemporary Clinical Trials* 2016;**48**:166-72. [DOI: 10.1016/j.cct.2016.05.003]

Chaple 2014 *{published data only}*

Chaple M, Sacks S, McKendrick K, Marsch LA, Belenko S, Leukefeld C, et al. Feasibility of a computerized intervention for offenders with substance use disorders: a research note. *Journal of Experimental Criminology* 2014;**10**(1):105-27.

Chaple 2016 *{published data only}*

Chaple M, Sacks S, McKendrick K, Marsch LA, Belenko S, Leukefeld C, et al. A comparative study of the therapeutic education system for incarcerated substance-abusing offenders. *Prison Journal* 2016;**96**(3):485-508.

Cheesman 2016 *{published data only}*

Cheesman FL, Graves SE, Holt K, Kunkel TL, Lee CG, White MT. Drug court effectiveness and efficiency: findings for Virginia. *Alcholism Treatment Quarterly* 2016;**34**(2):143-69.

Cihlar 2014 *{published data only}*

Cihlar BE. The trauma recovery and empowerment model: a trauma-informed treatment program for female offenders in the community. *Dissertation Abstracts International Section B: The Sciences and Engineering* 2014;**75**(5-B(E)):No Pagination Specified.

Clair 2013 *{published data only}*

Clair M, Stein LA, Soenksen S, Martin RA, Lebeau R, Golembeske C. Ethnicity as a moderator of motivational interviewing for incarcerated adolescents after release. *Journal of Substance Abuse Treatment* 2013;**45**(4):370-5.

Clair-Michaud 2016 *{published data only}*

Clair-Michaud M, Martin RA, Stein LAR, Bassett S, Lebeau R, Golembeske C. The impact of motivational interviewing on delinquent behaviors in incarcerated adolescents. *Journal of Substance Abuse Treatment* 2016;**65**:13-9. [DOI: 10.1016/j.jsat.2015.09.003]

Clark 2002 *{published data only}*

Clark HW, Horton A MacN Jr, Dennis M, Babor TF. Moving from research to practice just in time: the treatment of cannabis use disorders comes of age. *Addiction* 2002;**97**(suppl 1):1-3.

Clayton 2013 *{published data only}*

Clayton A, O'Connell MJ, Bellamy C, Benedict P, Rowe M. The citizenship project part II: impact of a citizenship intervention on clinical and community outcomes for persons with mental illness and criminal justice involvement. *American Journal of Community Psychology* 2013;**51**(1-2):114-22.

Compton 2016 *{published data only}*

Compton MT, Kelley ME, Pope A, Smith K, Broussard B, Reed TA, et al. Opening doors to recovery: recidivism and recovery among persons with serious mental illnesses and repeated hospitalizations. *Psychiatric Services* 2016;**67**(2):169-75.

Coulton 2017 *{published data only}*

Coulton S, Stockdale K, Marchand C, Hendrie N, Billings J, Boniface S, et al. Pragmatic randomised controlled trial to evaluate the effectiveness and cost effectiveness of a multi-component intervention to reduce substance use and risk-taking behaviour in adolescents involved in the criminal justice system: a trial protocol (RISKIT-CJS). *BMC Public Health* 2017;**17**(1):246.

Curtis 2015 *{published data only}*

Curtis SV, Wodarski JS. The East Tennessee assertive adolescent family treatment program: a three-year evaluation. *Social Work in Public Health* 2015;**30**(3):225-35.

Czuchry 2000 *{published data only}*

Czuchry M, Dansereau DF. Drug abuse treatment in criminal justice settings: enhancing community engagement and helpfulness. *American Journal of Drug and Alcohol Abuse* 2000;**26**(4):537-52.

Czuchry 2003 *{published data only}*

Czuchry M, Dansereau DF. Cognitive skills training: impact on drug abuse counseling and readiness for treatment. *American Journal of Drug and Alcohol Abuse* 2003;**29**(1):1-18.

D'Amico 2013 *{published data only}*

D'Amico EJ, Hunter SB, Miles JNV, Ewing BA, Osilla KC. A randomized controlled trial of a group motivational interviewing intervention for adolescents with a first time alcohol or drug offence. *Journal of Substance Abuse Treatment* 2013;**45**(5):400-8.

Dakof 2010 *{published data only}*

Dakof GA, Cohen JB, Henderson CE, Duarte E, Boustani M, Blackburn A, et al. A randomized pilot study of the Engaging Moms Program for family drug court. *Journal of Substance Abuse Treatment* 2010;**38**(3):263-74.

Davis 2015 *{published data only}*

Davis M, Sheidow AJ, McCart MR. Reducing recidivism and symptoms in emerging adults with serious mental health conditions and justice system involvement. *Journal of Behaviour Health Services and Research* 2015;**42**(2):172-90.

Day 2006 *{published data only}*

Day E. Rapid access to methadone improved entry and outcomes in heroin addicts awaiting methadone treatment. *Evidence Based Medicine* 2006;**11**(4):112.

Demaret 2015 *{published data only}*

Demaret I, Quertemont E, Litran G, Magoga C, Deblire C, Dubois N, et al. Efficacy of heroin-assisted treatment in Belgium: a randomised controlled trial. *European Addiction Research* 2015;**21**(4):179-87.

Dickson 2017 *{published data only}*

Dickson MF, Staton-Tindall M, Smith KE, Leukefeld C, Webster J, Oser CB. A Facebook follow-up strategy for rural drug-using women. *Journal of Rural Health* 2017;**33**(3):250-6.

Di Paola 2014 *{published data only}*

Di Paola A, Lincoln T, Skiest DJ, Desabrais M, Altice FL, Springer SA. Design and methods of a double blind randomized placebo-controlled trial of extended-release naltrexone for HIV-infected, opioid dependent prisoners and jail detainees who are transitioning to the community. *Contemporary Clinical Trials* 2014;**39**(2):256-68.

Dolan 2003 *{published data only}*

Dolan KA, Shearer J, MacDonald M, Mattick RP, Hall W, Wodak AD. A randomised controlled trial of methadone maintenance treatment versus wait list control in an Australian prison system. *Drug and Alcohol Dependence* 2003;**72**(1):59-65.

Dolan 2005 *{published data only}*

Dolan KA, Shearer J, White B, Zhou J, Kaldor J, Wodak AD. Four-year follow-up of imprisoned male heroin users and methadone treatment: mortality, re-incarceration and hepatitis C infection. *Addiction* 2005;**100**(6):820-8.

Dole 1969 *{published data only}*

Dole VP, Robinson JW, Orraca J, Towns E, Searcy P, Caine E. Methadone treatment of randomly selected criminal addicts. *New England Journal of Medicine* 1969;**280**(25):1372-5.

Doyle 2015 *{published data only}*

Doyle M, Butler T, Guthrie J, Shakeshaft A. Prison based treatment for alcohol and related other drug use among indigenous and non-indigenous men. *Drug and Alcohol Review* 2015;**34**:24.

Doyle 2016 *{published data only}*

Doyle M, Butler T, Guthrie J, Shakeshaft A. Prison based treatment for alcohol and related other drug use among indigenous and non indigenous men. *Drug and Alcohol Review* 2016;**35**:35.

Dunlop 2017 *{published data only}*

Dunlop AJ, Brown AL, Oldmeadow C, Harris A, Gill A, Sadler C, et al. Effectiveness and cost-effectiveness of unsupervised buprenorphine-naloxone for the treatment of heroin dependence in a randomized wait list controlled trial. *Drug and Alcohol Dependence* 2017;**174**:181-91. [DOI: 10.1016/j.drugalcdep.2017.01.016]

Easton 2007 *{published data only}*

Easton CJ, Babuscio T, Carroll KM. Treatment retention and outcome among cocaine-dependent patients with and without active criminal justice involvement. *Journal of American Academy of Psychiatry and the Law* 2007;**35**(1):83-91.

Easton 2017 *{published data only}*

Easton CJ, Crane CA, Mandel D. A randomized controlled trial assessing the efficacy of cognitive behavioral therapy for substance-dependent domestic violence offenders: an integrated substance abuse-domestic violence treatment approach (SADV). *Journal of Marital and Family Therapy* 2017:No Pagination Specified.

Egg 2000 *{published data only}*

Egg R, Pearson FS, Cleland CM, Lipton DS. Evaluations of correctional treatment programs in Germany: a review and meta-analysis. *Substance Use and Misuse* 2000;**35**(12-14):1967-2009.

Franck 2012 *{published data only}*

Franck J, Konstenius M, Jayaram-Lindstrom N, Philips B, Guterstam J. ADHD in drug addiction: an RCT on the feasibility of methylphenidate treatment in criminal amphetamine users. *International Journal of Neuropsychopharmacology* 2012;**1**:41.

Friedmann 2015 *{published data only}*

Friedmann PD, Lee JD, Nunes EV, Kinlock TW, O'Brien CP. Patient selection for extended-release naltrexone among criminal justice-involved persons with opioid use disorder. *Drug and Alcohol Dependence* 2015;**156**:e74-5. [CENTRAL: 10.1016/j.drugalcdep.2015.07.1120]

Friedmann 2017 *{published data only}*

Friedmann PD, Wilson D, Hoskinson R, Poshkus M, Clarke JG. Initiation of extended release naltrexone (xr-ntx) for opioid use disorder prior to release from prison. *Journal of Substance Abuse Treatment* 2017;**85**:45-8. [DOI: 10.1016/j.jsat.2017.04.010]

Ginsberg 2012 *{published data only}*

Ginsberg Y, Hirvikoski T, Grann M, Lindefors N. Long-term functional outcome in adult prison inmates with ADHD receiving OROS-methylphenidate. *European Archive of Psychiatry and Clinical Neuroscience* 2012;**262**(8):705-24.

Ginsberg 2015 *{published data only}*

Ginsberg Y. Pharmacological treatment of offenders with ADHD. *ADHD Attention Deficit and Hyperactivity Disorders* 2015;**1**:S4.

Ginsberg 2015a *{published data only}*

Ginsberg Y, Langstrom N, Larsson H, Lindefors N. Long-term treatment outcome in adult male prisoners with attention-deficit/hyperactivity disorder: three-year naturalistic follow-up of a 52-week methylphenidate trial. *Journal of Clinical Psychopharmacology* 2015;**35**(5):535-43.

Gisev 2015 *{published data only}*

Gisev N, Larney S, Gibson A, Kimber J, Burns L, Butler T, et al. The effect of treatment and retention with opioid substitution therapy in reducing crime among opioid-dependent people. *Pharmacoepidemiology and Drug Safety* 2015;**24**:28-9.

Gisev 2015a *{published data only}*

Gisev N, Shanahan M, Weatherburn DJ, Mattick RP, Larney S, Burns L, et al. A cost-effectiveness analysis of opioid substitution therapy upon release in reducing mortality among prisoners with a history of opioid dependence. *Pharmacoepidemiology and Drug Safety* 2015;**24**:481-2.

Gisev 2015b *{published data only}*

Gisev N, Shanahan M, Weatherburn D, Mattick RP, Larney S, Burns L, et al. A cost effectiveness analysis of opioid substitution therapy upon release from prison. *Drug and Alcohol Review* 2015;**34**:29.

Goddard-Eckrich 2018 *{published data only}*

Goddard-Eckrich DA. An evaluation of a group wellness intervention delivered to drug-involved women under criminal justice supervision in New York city: predictors of high program ratings and positive health indicators at twelve-month follow-up. *Dissertation Abstracts International Section A: Humanities and Social Sciences* 2018;**78**(12-A(E)).

Goorden 2015 *{published data only}*

Goorden M, Van Der Schee E, Hendriks VM, Hakkaart-van Roijen L. Cost-effectiveness of multidimensional family therapy for adolescents with a cannabis use disorder. *Journal of Mental Health Policy and Economics* 2015;**1**:S17.

Gordon 2014 *{published data only}*

Gordon MS, Kinlock TW, Schwartz RP, Fitzgerald TT, O'Grady KE, Vocci FJ. A randomized controlled trial of prison-initiated buprenorphine: prison outcomes and community treatment entry. *Drug and Alcohol Dependence* 2014;**142**:33-40.

Gordon 2015 *{published data only}*

Gordon MS, Kinlock TW, Vocci FJ, Fitzgerald TT, Memisoglu A, Silverman B. A phase 4, pilot, open-label study of VIVITROL (extended-release naltrexone XR-NTX) for prisoners. *Journal of Substance Abuse Treatment* 2015;**59**:52-8.

Gordon 2017 *{published data only}*

Gordon MS, Vocci FJ, Fitzgerald TT, O'Grady KE, O'Brien CP. Extended-release naltrexone for pre-release prisoners: a randomized trial of medical mobile treatment. *Contemporary Clinical Trials* 2017;**53**:130-6. [DOI: 10.1016/j.cct.2016.12.015]

Gordon 2017a *{published data only}*

Gordon MS, Kinlock TW, Schwartz RP, O'Grady KE, Fitzgerald TT, Vocci FJ. A randomized clinical trial of buprenorphine for prisoners: findings at 12-months post-release. *Drug and Alcohol Dependence* 2017;**172**:34-42.

Gottfredson 2005 *{published data only}*

Gottfredson DC, Kearley BW, Najaka SS, Rocha CM. The Baltimore city drug treatment court: 3-year self-report outcome study. *Evaluation Review* 2005;**29**(1):42-64.

Haig 2003 *{published data only}*

Haig T. Randomized controlled trial proves effectiveness of methadone maintenance treatment in prison. *Canadian HIV/AIDS Policy and Law Review/Canadian HIV/AIDS Legal Network* 2003;**8**(3):48.

Hanlon 1975 *{published data only}*

Hanlon TE, McCabe OL, Savage C, Kurland AA. A controlled comparison of cyclazocine and naloxone treatment of the

paroled narcotic addict. *International Pharmacopsychiatry* 1975;**10**(4):240-50.

Hanlon 1977 *{published data only}*

Hanlon TE, McCabe OL, Savage C, Kurland AA. Narcotic antagonist treatment of addict parolees. The failure of an effective approach. *Comprehensive Psychiatry* 1977;**18**(3):211-9.

Harada 2012 *{published data only}*

Harada T. The randomized controlled trial of the prison-based Japanese Matrix Program (J-MAT) for methamphetamine abusers. [Japanese]. *Japanese Journal of Alcohol Studies & Drug Dependence* 2012;**47**(6):298-307.

Heimer 2006 *{published data only}*

Heimer R, Catania H, Newman RG, Zambrano J, Brunet A, Ortiz AM. Methadone maintenance in prison: evaluation of a pilot program in Puerto Rico. *Drug and Alcohol Dependence* 2006;**83**(2):122-9.

Henderson 2010 *{published data only}*

Henderson CE, Dakof GA, Greenbaum PE, Liddle HA. Effectiveness of multidimensional family therapy with higher severity substance-abusing adolescents: report from two randomized controlled trials. *Journal of Consulting and Clinical Psychology* 2010;**78**(6):885-97.

Henderson 2016 *{published data only}*

Henderson CE, Wevodau AL, Henderson SE, Colbourn SL, Gharagozloo L, North LW, et al. An independent replication of the adolescent-community reinforcement approach with justice-involved youth. *American Journal of Addiction* 2016;**25**(3):233-40.

Hendriks 2011 *{published data only}*

Hendriks V, van der Schee E, Blanken P. Treatment of adolescents with a cannabis use disorder: main findings of a randomized controlled trial comparing multidimensional family therapy and cognitive behavioral therapy in The Netherlands. *Drug and Alcohol Dependence* 2011;**119**(1-2):64-71.

Henggeler 2006 *{published data only}*

Henggeler SW, Halliday-Boykins CA, Cunningham PB, Randall J, Shapiro SB, Chapman JE. Juvenile drug court: enhancing outcomes by integrating evidence-based treatments. *Journal of Consulting and Clinical Psychology* 2006;**74**(1):42-54.

Herrman 2016 *{published data only}*

Herrman H, Humphreys C, Halperin S, Monson K, Harvey C, Mihalopoulos C, et al. A controlled trial of implementing a complex mental health intervention for carers of vulnerable young people living in out-of-home care: the RIPPLE project. *BMC Psychiatry* 2016;**16**(1):436.

Himelstein 2014 *{published data only}*

Himelstein S, Saul S, Garcia-Romeu A, Pinedo D. Mindfulness training as an intervention for substance user incarcerated adolescents: a pilot grounded theory study. *Substance Use and Misuse* 2014;**49**(5):560-70.

Himelstein 2015 *{published data only}*

Himelstein S, Saul S, Garcia-Romeu A. Does mindfulness meditation increase effectiveness of substance abuse treatment with incarcerated youth? A pilot randomized controlled trial. *Mindfulness* 2015;**6**(6):1472-80.

Hoffman 1996 *{published data only}*

Hoffman JA, Caudill BD, Koman Iii JJ, Luckey JW, Flynn PM, Mayo DW. Psychosocial treatments for cocaine abuse: 12-month treatment outcomes. *Journal of Substance Abuse Treatment* 1996;**13**(1):3-11.

Holloway 2006 *{published data only}*

Holloway KR, Bennett TH, Farrington DP. The effectiveness of drug treatment programs in reducing criminal behavior: a meta-analysis. *Psicothema* 2006;**18**(3):620-9.

Hser 2013 *{published data only}*

Hser YI, Fu L, Wu F, Du J, Zhao M. Pilot trial of a recovery management intervention for heroin addicts released from compulsory rehabilitation in China. *Journal of Substance Abuse Treatment* 2013;**44**(1):78-83.

Jalali 2017 *{published data only}*

Jalali F, Hashemi SF, Hasani A, Fakoor SN. The effectiveness of cognitive group therapy based on schema-focused approach on self-esteem and emotion regulation in drug addicted prisoners under the methadone maintenance treatment (MMT). *Journal of Groups in Addiction and Recovery* 2017;**12**(4):284-95.

Jason 2007 *{published data only}*

Jason LA, Olson BD, Ferrari JR, Majer JM, Alvarez J, Stout J. An examination of main and interactive effects of substance abuse recovery housing on multiple indicators of adjustment. *Addiction* 2007;**102**(7):1114-21.

Jason 2015 *{published data only}*

Jason LA, Olson BD, Harvey R. Evaluating alternative aftercare models for ex-offenders. *Journal of Drug Issues* 2015;**45**(1):53-68.

Jason 2016 *{published data only}*

Jason LA, Salina Do, Ram D. Oxford recovery housing: length of stay correlated with improved outcomes for women previously involved with the criminal justice system. *Substance Abuse* 2016;**37**(1):248-54.

Jerrell 1995 *{published data only}*

Jerrell JM, Ridgely MS. Evaluating changes in symptoms and functioning of dually diagnosed clients in specialized treatment. *Psychiatric Services* 1995;**46**(3):233-8.

Joe 1997 *{published data only}*

Joe GW, Dansereau DF, Pitre U, Simpson DD. Effectiveness of node-link mapping enhanced counseling for opiate addicts: a 12-month posttreatment follow-up. *Journal of Nervous and Mental Disease* 1997;**185**(5):306-13.

Kearley 2018 *{published data only}*

Kearley BW. Long term effects of drug court participation: evidence from a 15-year follow-up of a randomized controlled

trial. *Dissertation Abstractions International Section A: Humanities and Social Sciences* 2018;**78**(12-A(E)):No Pagination Specified.

Kelly 2016 *{published data only}*

Kelly CE, Welsh WN. Examining treatment climate across prison-based substance abuse treatment groups. *Substance Use and Misuse* 2016;**51**(7):902-11.

Kinlock 2007 *{published data only}*

Kinlock TW, Gordon MS, Schwartz RP, O'Grady K, Fitzgerald TT, Wilson M. A randomized clinical trial of methadone maintenance for prisoners: results at 1-month post-release. *Drug and Alcohol Dependence* 2007;**91**(2-3):220-7.

Kinlock 2009 *{published data only}*

Kinlock TW, Gordon MS, Schwartz RP, Fitzgerald TT, O'Grady KE. A randomized clinical trial of methadone maintenance for prisoners: results at 12 months postrelease. *Journal of Substance Abuse Treatment* 2009;**37**(3):277-85.

Knight 2016 *{published data only}*

Knight DK, Belenko S, Wiley T, Robertson AA, Arrigona N, Dennis M, et al. Juvenile Justice-Translational Research on Interventions for Adolescents in the Legal System (JJ-TRIALS): a cluster randomized trial targeting system-wide improvement in substance use services. *Implementation Science* 2016;**11**:57.

Knudsen 2014 *{published data only}*

Knudsen HK, Staton-Tindall M, Oser CB, Havens JR, Leukefeld CG. Reducing risky relationships: a multisite randomized trial of a prison-based intervention for reducing HIV sexual risk behaviors among women with a history of drug use. *AIDS Care* 2014;**26**(9):1071-9.

Knudsen 2016 *{published data only}*

Knudsen KJ, Wingenfeld S. A specialized treatment court for veterans with trauma exposure: implications for the field. *Community Mental Health Journal* 2016;**52**(2):127-35.

Kongsakon 2005 *{published data only}*

Kongsakon R, Papadopoulos KI, Saguansiritham R. Mirtazapine in amphetamine detoxification: a placebo-controlled pilot study. *International Clinical Psychopharmcology* 2005;**20**(5):253-6.

Konstenius 2014 *{published data only}*

Konstenius M, Jayaram-Lindstrom N, Guterstam J, Beck O, Philips B, Franck J. Methylphenidate for attention deficit hyperactivity disorder and drug relapse in criminal offenders with substance dependence: a 24-week randomized placebo-controlled trial. *Addiction* 2014;**109**(3):440-9.

Kopak 2015 *{published data only}*

Kopak AM, Dean LV, Proctor SL, Miller L, Hoffmann NG. Effectiveness of the rehabilitation for addicted prisoners trust (RAPt) programme. *Journal of Substance Use* 2015;**20**(4):254-61.

Krebs 2017 *{published data only}*

Krebs E, Huang DYC, Evans E, Urada D, Hser Y, Nosyk B. The effect of treatment for opioid use disorders on the costs of crime. *Drug and Alcohol Dependence* 2017;**171**:e110-1.

Kua 2014 *{published data only}*

Kua EH. Interventions for reducing benzodiazepine use in older people: meta-analysis of randomised controlled trials: correction. *British Journal of Psychiatry* 2014;**205**(4):331.

Kubiak 2016 *{published data only}*

Kubiak S, Fedock G, Kim WJ, Bybee D. Long-term outcomes of a RCT intervention study for women with violent crimes. *Journal of the Society for Social Work and Research* 2016;**7**(4):661-79.

Kurland 1975 *{published data only}*

Kurland AA, McCabe L, Hanlon TE. Contingent naloxone (N allylnoroxymorphone) treatment of the paroled narcotic addict. *International Pharmacopsychiatry* 1975;**10**(3):157-68.

Kurniasanti 2014 *{published data only}*

Kurniasanti K, Alia D, Zyzlavsky S. Neurocognitive disorder on prisoners using cannabis in Cipinang Jakarta prison. *Alcohol and Alcoholism* 2014;**49**.

Lee 2011 *{published data only}*

Lee KH, Bowen S, An-Fu B. Psychosocial outcomes of mindfulness-based relapse prevention in incarcerated substance abusers in Taiwan: a preliminary study. *Journal of Substance Abuse* 2011;**16**(6):476-83.

Lee 2013 *{published data only}*

Lee TG, Kerns SE. Family integrated transitions: a promising program for reducing recidivism in a cost-effective manner. Thomas CR, Pope K, eds. The Origins of Antisocial Behavior: A Developmental Perspective. New York: Oxford University Press, 2013:219-233.

Lee 2014 *{published data only}*

Lee JD, Friedmann P, Wilson D, Nunes E, Kinlock T, O'Brien C. Or14-4: effectiveness of extended-release naltrexone (XR-NTX) among criminal justice-involved persons with opioid use disorders. *Alcohol and Alcoholism (Oxford, Oxfordshire)* 2014;**49 Suppl 1**:i51-2.

Lee 2014b *{published data only}*

Lee H, Shin S-K, Park S-Y. Effects of a therapeutic community on Korean substance abusers in prison. *Journal of Social Services Research* 2014;**40**(4):481-90.

Lee 2014c *{published data only}*

Lee JD, Friedmann P, Wilson D, Nunes E, Kinlock T, O'Brien C. Effectiveness of extended release naltrexone (XR-NTX) among criminal justice-involved persons with opioid use disorders. *Alcohol and Alcoholism* 2014;**49**.

Lee 2015 *{published data only}*

Lee JD, Friedmann PD, Kinlock TW, Nunes EV, Gordon MS, O'Brien CP. Extended-release naltrexone for opioid relapse prevention among opioid-dependent, criminal justice-involved adults. *Drug and Alcohol Dependence* 2015;**156**:e125.

Lee 2015a *{published data only}*

Lee JD, McDonald R, Grossman E, McNeely J, Laska E, Rotrosen J, et al. Opioid treatment at release from jail using extended-release naltrexone: a pilot proof-of-concept randomized effectiveness trial. *Addiction* 2015;**110**(6):1008-14.

Lee 2015b *{published data only}*

Lee JD, Friedmann PD, Boney TY, Hoskinson RA, McDonald R, Gordon M, et al. Extended-release naltrexone to prevent relapse among opioid dependent, criminal justice system involved adults: rationale and design of a randomized controlled effectiveness trial. *Contemporary Clinical Trials* 2015;**41**:110-7.

Lee 2016 *{published data only}*

Lee J, Gordon M, Friedmann P, Nunes E, O'Brien C. Extended-release naltrexone to prevent opioid relapse among adults with criminal justice system involvement. *American Journal of Addictions* 2016;**25**(4):345.

Lee 2016a *{published data only}*

Lee JD, Friedmann PD, Kinlock TW, Nunes EV, Boney TY, Hoskinson RA, et al. Extended-release naltrexone to prevent opioid relapse in criminal justice offenders. *New England Journal of Medicine* 2016;**374**(13):1232-42.

Lehman 2015 *{published data only}*

Lehman WE, Rowan GA, Greener JM, Joe GW, Yang Y, Knight K. Evaluation of WaySafe: a disease-risk reduction curriculum for substance-abusing offenders. *Journal of Substance Abuse Treatment* 2015;**58**:25-32.

Lerch 2017 *{published data only}*

Lerch J, Walters ST, Tang L, Taxman FS. Effectiveness of a computerized motivational intervention on treatment initiation and substance use: results from a randomized trial. *Journal of Substance Abuse Treatment* 2017;**80**:59-66.

Liddle 2011 *{published data only}*

Liddle HA, Dakof GA, Henderson C, Rowe C. Implementation outcomes of multidimensional family therapy-detention to community: a reintegration program for drug-using juvenile detainees. *International Journal of Offender Therapy and Comparative Criminology* 2011;**55**(4):587-604.

Lintzeris 2006 *{published data only}*

Lintzeris N, Strang J, Metrebian N, Byford S, Hallam C, Lee S, et al. Methodology for the randomised injecting opioid treatment trial (RIOTT): evaluating injectable methadone and injectable heroin treatment versus optimised oral methadone treatment in the UK. *Harm Reduction Manual* 2006;**3 (no pagination)**(28).

Little 1993 *{published data only}*

Little GL, Robinson KD, Burnette KD. Cognitive behavioral treatment of felony drug offenders: a five-year recidivism report. *Psychological Reports* 1993;**73**(3 Pt 2):1089-90.

Lo 2012 *{published data only}*

Lo Sasso AT, Byro E, Jason LA, Ferrari JR, Olson B. Benefits and costs associated with mutual-help community-based recovery homes: the Oxford house model. *Evaluation and Program Planning* 2012;**35**(1):47-53.

Lobmann 2007 *{published data only}*

Lobmann R. Diamorphine substitution therapy and criminal activity. [German] Diamorphingestutzte behandlung und kriminalitat. *Sucht* 2007;**53**(5):288-95.

Luciano 2014 *{published data only}*

Luciano A, Belstock J, Malmberg P, McHugo GJ, Drake RE, Xie H, et al. Predictors of incarceration among Urban adults with co-occurring severe mental illness and a substance use disorder. *Psychiatric Services* 2014;**65**(11):1325-31.

Magura 2009 *{published data only}*

Magura S, Lee JD, Hershberger J, Joseph H, Marsch L, Shropshire C, et al. Buprenorphine and methadone maintenance in jail and post-release: a randomized clinical trial. *Drug and Alcohol Dependence* 2009;**99**(1-3):222-30.

March 2006 *{published data only}*

March JC, Oviedo-Joekes E, Perea-Milla E, Carrasco F, Team Pepsa. Controlled trial of prescribed heroin in the treatment of opioid addiction. *Journal of Substance Abuse Treatment* 2006;**31**(2):203-11.

Marinelli-Casey 2008 *{published data only}*

Marinelli-Casey P, Gonzales R, Hillhouse M, Ang A, Zweben J, Cohen J, et al. Drug court treatment for methamphetamine dependence: treatment response and posttreatment outcomes. *Journal of Substance Abuse Treatment* 2008;**34**(2):242-8.

Marlowe 2008 *{published data only}*

Marlowe DB, Festinger DS, Dugosh KL, Arabia PL, Kirby KC. An effectiveness trial of contingency management in a felony preadjudication drug court. *Journal of Applied Behaviour Analysis* 2008;**41**(4):565-77.

Marlowe 2009 *{published data only}*

Marlowe DB, Festinger DS, Arabia PL, Dugosh KL, Benasutti KM, Croft JR. Adaptive interventions may optimize outcomes in drug courts: a pilot study. *Current Psychiatric Reports* 2009;**11**(5):370-6.

Marsch 1998 *{published data only}*

Marsch LA. The efficacy of methadone maintenance interventions in reducing illicit opiate use, HIV risk behavior and criminality: a meta-analysis. *Addiction* 1998;**93**(4):515-32.

Martin 2010 *{published data only}*

Martin M, Vanichseni S, Suntharasamai P, Mock PA, van Griensven F, Pitisuttithum P, et al. Drug use and the risk of HIV infection amongst injection drug users participating in an HIV vaccine trial in Bangkok, 1999-2003. *International Journal of Drug Policy* 2010;**21**(4):296-301.

Martin 2011 *{published data only}*

Martin M, Vanichseni S, Suntharasamai P, Sangkum U, Chuachoowong R, Mock PA, et al. Enrollment characteristics and risk behaviors of injection drug users participating in the Bangkok Tenofovir study, Thailand. *PLoSONE* 2011;**6 (9) (no pagination)**(e25127).

Martin 2014 *{published data only}*

Martin M, Vanichseni S, Suntharasamai P, Sangkum U, Mock PA, Leethochawalit M, et al. Risk behaviors and risk factors for HIV infection among participants in the Bangkok tenofovir study, an HIV pre-exposure prophylaxis trial among people who inject drugs. *PLoSONE* 2014;**9 (3) (no pagination)**(e92809).

Martin 2015 *{published data only}*

Martin M, Vanichseni S, Suntharasamai P, Sangkum U, Mock PA, Leethochawalit M, et al. The impact of adherence to preexposure prophylaxis on the risk of HIV infection among people who inject drugs. *Topics of Antiviral Medicine* 2015;**29**(7):819-24.

Martin 2017 *{published data only}*

Martin M, Vanichseni S, Suntharasamai P, Sangkum U, Mock PA, Chaipung B, et al. Factors associated with the uptake of and adherence to HIV pre-exposure prophylaxis in people who have injected drugs: an observational, open-label extension of the Bangkok tenofovir study. *Lancet HIV* 2017;**4**(2):e59-66.

Mazerolle 2000 *{published data only}*

Mazerolle LG, Price JF, Roehl J. A randomized field trial in Oakland, California. *Evaluation Review* 2000;**24**(2):212-41.

McAuliffe 1990 *{published data only}*

McAuliffe WE. A randomized controlled trial of recovery training and self-help for opioid addicts in New England and Hong Kong. *Journal of Psychoactive Drugs* 1990;**22**(2):197-209.

McCollister 2014 *{published data only}*

McCollister KE, Scott CK, Dennis ML, Freitas DM, French MT, Funk RR. Economic costs of a postrelease intervention for incarcerated female substance abusers: recovery management checkups for women offenders (RMC-WO). *Journal of Offender Rehabilitation* 2014;**53**(7):543-61.

McCollister 2015 *{published data only}*

McCollister KE, French MT, Sheidow AJ, Henggeler SW, Halliday-Boykins CA. Estimating the differential costs of criminal activity for juvenile drug court participants: challenges and recommendations: Erratum. *Journal of Behaviour Health Services and Research* 2015;**42**(4):554.

McCollister 2016 *{published data only}*

McCollister K, Yang X, McKay JR. Cost-effectiveness analysis of a continuing care intervention for cocaine-dependent adults. *Drug and Alcohol Dependence* 2016;**158**:38-44.

McCollister 2017 *{published data only}*

McCollister K, Yang X, Sayed B, French MT, Leff JA, Schackman BR. Monetary conversion factors for economic evaluations of substance use disorders. *Journal of Substance Abuse Treatment* 2017;**81**:25-34.

McDonald 2016 *{published data only}*

McDonald RD, Tofighi B, Laska E, Goldfeld K, Bonilla W, Flannery M, et al. Extended-release naltrexone opioid treatment at jail reentry (XOR). *Contemporary Clinical Trials* 2016;**49**:57-64.

McKenzie 2012 *{published data only}*

McKenzie M, Zaller N, Dickman SL, Green TC, Parihk A, Friedmann PD, et al. A randomized trial of methadone initiation prior to release from incarceration. *Substance Abuse* 2012;**33**(1):19-29.

Meade 2017 *{published data only}*

Meade AM, Bird SM, Strang J, Pepple T, Nichols LL, Mascarenhas M, et al. Methods for delivering the UK's multi-centre prison-based naloxone-on-release pilot randomised trial (n-alive): Europe's largest prison-based randomised controlled trial. *Drug and Alcohol Review* 2017:No Pagination Specified.

Metrebian 2015 *{published data only}*

Metrebian N, Groshkova T, Hellier J, Charles V, Martin A, Forzisi L, et al. Drug use, health and social outcomes of hard-to-treat heroin addicts receiving supervised injectable opiate treatment: secondary outcomes from the Randomized Injectable Opioid Treatment Trial (RIOTT). *Addiction* 2015;**110**(3):479-90.

Mitchell 2013 *{published data only}*

Mitchell SG, Gryczynski J, Schwartz RP, O'Grady KE, Olsen YK, Jaffe JH. A randomized trial of intensive outpatient (IOP) vs. standard outpatient (OP) buprenorphine treatment for African Americans. *Drug and Alcohol Dependence* 2013;**128**(3):222-9.

Mitchell 2014 *{published data only}*

Mitchell SG, Gryczynski J, Kelly SM, O'Grady KE, Jaffe JH, Olsen YK, et al. Treatment outcomes of African American buprenorphine patients by parole and probation status. *Journal of Drug Issues* 2014;**44**(1):69-82.

Murphy 2017 *{published data only}*

Murphy SM, Polsky D, Lee JD, Friedmann PD, Kinlock TW, Nunes EV, et al. Cost-effectiveness of extended release naltrexone to prevent relapse among criminal justice-involved individuals with a history of opioid use disorder. *Addiction* 2017;**112**(8):1440-50.

Nemes 1999 *{published data only}*

Nemes S, Wish ED, Messina N. Comparing the impact of standard and abbreviated treatment in a therapeutic community - Findings from the District of Columbia Treatment Initiative Experiment. *Journal of Substance Abuse Treatment* 1999;**17**(4):339-47.

Nirenberg 2013 *{published data only}*

Nirenberg T, Baird J, Longabaugh R, Mello MJ. Motivational counseling reduces future police charges in court referred youth. *Accident: Analysis and Prevention* 2013;**53**:89-99.

Nirenberg 2013a *{published data only}*

Nirenberg T, Longabaugh R, Baird J, Mello MJ. Treatment may influence self-report and jeopardize our understanding of outcome. *Journal of Studies on Alcohol and Drugs* 2013;**74**(5):770-6.

Nosyk 2010 *{published data only}*

Nosyk B, Geller J, Guh DP, Oviedo-Joekes E, Brissette S, Marsh DC, et al. The effect of motivational status on

treatment outcome in the North American Opiate Medication Initiative (NAOMI) study. *Drug and Alcohol Dependence* 2010;**111**(1-2):161-5.

Nyamathi 2014 *{published data only}*

Nyamathi A, Salem B, Farabee D, Hall E, Zhang S, Khalilifard F, et al. Predictors of high level of hostility among homeless men on parole. *Journal of Offender Rehabilitation* 2014;**53**(2):95-115.

Nyamathi 2014a *{published data only}*

Nyamathi AM, Salem BE, Farabee D, Hall E, Zhang S, Marfisee M, et al. Correlates of heroin and methamphetamine use among homeless male ex-jail and prison offenders. *Addiction Research and Theory* 2014;**22**(6):463-73.

Nyamathi 2015 *{published data only}*

Nyamathi A, Salem BE, Zhang S, Farabee D, Hall B, Khalilifard F, et al. Nursing case management, peer coaching, and hepatitis a and B vaccine completion among homeless men recently released on parole: randomized clinical trial. *Nursing Research* 2015;**64**(3):177-89.

Nyamathi 2016 *{published data only}*

Nyamathi AM, Zhang SX, Wall S, Hall EA, Salem BE, Farabee D, et al. Drug use and multiple sex partners among homeless ex-offenders: secondary findings from an experimental study. *Nursing Research* 2016;**65**(3):179-90.

Nyamathi 2017a *{published data only}*

Nyamathi A, Salem BE, Farabee D, Hall E, Zhang S, Faucette M, et al. Impact of an intervention for recently released homeless offenders on self-reported re-arrest at 6 and 12 months. *Journal of Addictive Diseases* 2017;**36**(1):60-71.

O'Brien 2015 *{published data only}*

O'Brien CP, Friedmann PD, Nunes E, Lee JD, Kinlock TW. Depot naltrexone as relapse prevention for opioid-dependent parolees. *Drug and Alcohol Dependence* 2015;**146**:e54-5.

O'Brien 2017 *{published data only}*

O'Brien MD. Preparing sex offenders for treatment. Boer DP, Beech AR, Ward TC, Leam A, Rettenberger M, Marshall LE, et al, eds. The Wiley Handbook on the Theories, Assessment, and Treatment of Sexual Offending. New York: Wiley, 2017:1541-57.

Owens 2016 *{published data only}*

Owens MD, McCrady BS. A pilot study of a brief motivational intervention for incarcerated drinkers. *Journal of Substance Abuse Treatment* 2016;**68**:1-10.

Owens 2017 *{published data only}*

Owens MD. A randomized clinical trial of a brief motivational intervention for incarcerated drinkers. *Dissertation Abstracts International Section B: The Sciences and Engineering* 2017;**78**(3-B(E)).

Page 1982 *{published data only}*

Page RC, Miehl H. Marathon groups: facilitating the personal growth of male illicit drug users. *International Journal of the Addictions* 1982;**17**(2):393-7.

Parmar 2017 *{published data only}*

Parmar MKB, Strang J, Choo L, Meade AM, Bird SM. Randomized controlled pilot trial of naloxone-on-release to prevent post-prison opioid overdose deaths. *Addiction* 2017;**112**(3):502-15.

Pettus-Davis 2017 *{published data only}*

Pettus-DC, Dunnigan A, Veeh CA, Howard MO, Scheyett AM, Roberts LA. Enhancing social support post incarceration: results from a pilot randomized controlled trial. *Journal of Clinical Psychology* 2017;**73**(10):1226-46.

Pierce 2018 *{published data only}*

Pierce M, Bird SM, Hickman M, Marsden J, Dunn G, Seddon T, et al. Effect of initiating drug treatment on the risk of drug-related poisoning death and acquisitive crime among offending heroin users. *International Journal of Drug Policy* 2018;**51**:42-51.

Pijl 2017 *{published data only}*

Pijl EM, Bourque S, Martens M, Cherniwchan A. Take-home naloxone kit distribution: a pilot project involving people who use drugs and who are newly released from a correctional facility. *Canadian Journal of Criminology and Criminal Justice* 2017;**59**(4):559-71.

Pitre 1997 *{published data only}*

Pitre U, Dees SM, Dansereau DF, Simpson D. Mapping techniques to improve substance abuse treatment in criminal justice settings. *Journal of Drug Issues* 1997;**27**(2):431-44.

Pitre 1998 *{published data only}*

Pitre U, Dansereau DF, Newbern D, Simpson DD. Residential drug abuse treatment for probationers: use of node-link mapping to enhance participation and progress. *Journal of Substance Abuse Treatment* 1998;**15**(6):535-43.

Poblete 2017 *{published data only}*

Poblete F, Barticevic NA, Zuzulich MS, Portilla R, Castillo-CA, Sapag JC, et al. A randomized controlled trial of a brief intervention for alcohol and drugs linked to the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) in primary health care in Chile. *Addiction* 2017;**112**(8):1462-9.

Prendergast 2015 *{published data only}*

Prendergast ML, Hall EA, Grossman J, Veliz R, Gregorio L, Warda US, et al. Effectiveness of using incentives to improve parolee admission and attendance in community addiction treatment. *Criminal Justice and Behaviour* 2015;**42**(10):1008-31.

Prendergast 2017 *{published data only}*

Prendergast ML, McCollister K, Warda U. A randomized study of the use of screening, brief intervention, and referral to treatment (SBIRT) for drug and alcohol use with jail inmates. *Journal of Substance Abuse Treatment* 2017;**74**:54-64.

Rich 2015 *{published data only}*

Rich JD, McKenzie M, Larney S, Wong JB, Tran L, Clarke J, et al. Methadone continuation versus forced withdrawal on incarceration in a combined US prison and jail: a randomised, open-label trial. *Lancet* 2015;**386**(9991):350-9.

Roll 2005 *{published data only}*

Roll JM, Prendergast ML, Sorensen K, Prakash S, Chudzynski JE. A comparison of voucher exchanges between criminal justice involved and noninvolved participants enrolled in voucher-based contingency management drug abuse treatment programs. *American Journal of Drug and Alcohol Abuse* 2005;**31**(3):393-401.

Rounsaville 2008 *{published data only}*

Rounsaville DB, Hunkele K, Easton CJ, Nich C, Carroll KM. Making consent more informed: preliminary results from a multiple-choice test among probation-referred marijuana users entering a randomized clinical trial. *Journal of the American Academy of Psychiatry and the Law* 2008;**36**(3):354-9.

Rowe 2007 *{published data only}*

Rowe M, Bellamy C, Baranoski M, Wieland M, O'Connell MJ, Benedict P, et al. A peer-support, group intervention to reduce substance use and criminality among persons with severe mental illness. *Psychiatric Services* 2007;**58**(7):955-61.

Rowland 2008 *{published data only}*

Rowland MD, Chapman JE, Henggeler SW. Sibling outcomes from a randomized trial of evidence-based treatments with substance abusing juvenile offenders. *Journal of Child and Adolescent Substance Abuse* 2008;**17**(3):11-26.

Sajatovic 2013 *{published data only}*

Sajatovic M, Levin J, Ramirez LF, Hahn DY, Tatsuoka C, Bialko CS, et al. Prospective trial of customized adherence enhancement plus long-acting injectable antipsychotic medication in homeless or recently homeless individuals with schizophrenia or schizoaffective disorder. *Journal of Clinical Psychology* 2013;**74**(12):1249-55.

Saxena 2014 *{published data only}*

Saxena P, Messina NP, Grella CE. Who benefits from gender-responsive treatment? Accounting for abuse history on longitudinal outcomes for women in prison. *Criminal Justice and Behaviour* 2014;**41**(4):417-32.

Schaeffer 2014 *{published data only}*

Schaeffer CM, Henggeler SW, Ford JD, Mann M, Chang R, Chapman JE. RCT of a promising vocational/employment program for high-risk juvenile offenders. *Journal of Substance Abuse Treatment* 2014;**46**(2):134-43.

Schwartz 2014 *{published data only}*

Schwartz RP, Alexandre PK, Kelly SM, O'Grady KE, Gryczynski J, Jaffe JH. Interim versus standard methadone treatment: a benefit-cost analysis. *Journal of Substance Abuse* 2014;**46**(3):306-14.

Schwartz 2016 *{published data only}*

Schwartz RP, Kelly SM, Mitchell SG, Dunlap L, Zarkin GA, Sharma A, et al. Erratum: corrigendum to interim methadone and patient navigation in jail: rationale and design of a randomized clinical trial. *Contemporary Clinical Trials* 2016;**51**:97.

Schwartz 2016a *{published data only}*

Schwartz RP, Kelly SM, Mitchell SG, Dunlap L, Zarkin GA, Sharma A, et al. Interim methadone and patient navigation in jail: rationale and design of a randomized clinical trial. *Contemporary Clinical Trials* 2016;**49**:21-8.

Schwartz 2016b *{published data only}*

Schwartz RP, Kelly SM, Mitchell SG, Dunlap L, Zarkin GA, Sharma A, et al. Interim methadone and patient navigation in jail: rationale and design of a randomized clinical trial. *Contemporary Clinical Trials* 2016;**51**:97.

Scott 2017 *{published data only}*

Scott CK, Dennis ML, Lurigio AJ. The effects of specialized probation and recovery management checkups (RMCs) on treatment participation, substance use, HIV risk behaviors, and recidivism among female offenders: main findings of a 3-year experiment using subject by intervention interaction analysis. *Journal of Experimental Criminology* 2017;**13**(1):53-77.

Seitz-Brown 2015 *{published data only}*

Seitz-Brown C, DeGeorge D, Blevins E, Williams J, Lejuez CW, Daughters SB. A brief behavioral activation treatment for substance use associated with lower rates of recidivism at a one-year follow-up. *Drug and Alcohol Dependence* 2015;**146**:e93.

Shaul 2016 *{published data only}*

Shaul L, Koeter MW, Schippers GM. Brief motivation enhancing intervention to prevent criminal recidivism in substance-abusing offenders under supervision: a randomized trial. *Psychology Crime and Law* 2016;**22**(9):903-14.

Sheard 2007 *{published data only}*

Sheard L, Adams CE, Wright NMJ, El-Sayeh H, Dalton R, Tompkins CNE. The Leeds Evaluation of Efficacy of Detoxification Study (LEEDS) prisons project pilot study: protocol for a randomised controlled trial comparing dihydrocodeine and buprenorphine for opiate detoxification. *Trials* 2007;**8 (no pagination)**(1).

Sheard 2009 *{published data only}*

Sheard L, Wright NM, El-Sayeh HG, Adams CE, Li R, Tompkins CN. The Leeds Evaluation of Efficacy of Detoxification Study (LEEDS) prisons project: a randomised controlled trial comparing dihydrocodeine and buprenorphine for opiate detoxification. *Substance Abuse Treatment, Prevention and Policy* 2009;**4**:1.

Sheard 2009a *{published data only}*

Sheard L, Wright NMJ, Adams CE, Bound N, Rushforth B, Hart R, et al. The Leeds Evaluation of Efficacy of Detoxification Study (LEEDS) prisons project study: protocol for a randomised controlled trial comparing methadone and buprenorphine for opiate detoxification. *Trials* 2009;**10 (no pagination)**(53).

Shearer 2003 *{published data only}*

Shearer J, Wodak A, Van Beek I, Mattick RP, Lewis J. Pilot randomized double blind placebo-controlled study of dexamphetamine for cocaine dependence. *Addiction* 2003;**98**(8):1137-41.

Shearer 2007 *{published data only}*

Shearer J, Wodak AD, Dolan KA. Evaluation of a prison-based naltrexone program. *International Journal of Prisoner Health* 2007;**3**(3):214-24.

Sinha 2003 *{published data only}*

Sinha R, Easton C, Renee-Aubin L, Carroll KM. Engaging young probation-referred marijuana-abusing individuals in treatment: a pilot trial. *American Journal of Addictions* 2003;**12**(4):314-23.

Smith 2017 *{published data only}*

Smith LR, Strathdee SA, Metzger D, Latkin C. Evaluating network-level predictors of behavior change among injection networks enrolled in the HPTN 037 randomized controlled trial. *Drug and Alcohol Dependence* 2017;**175**:164-70.

Somers 2013 *{published data only}*

Somers JM, Rezansoff SN, Moniruzzaman A, Palepu A, Patterson M. Housing first reduces re-offending among formerly homeless adults with mental disorders: results of a randomized controlled trial. *PLoSONE* 2013;**8 (9) (no pagination)**(e72946).

Spohr 2015 *{published data only}*

Spohr SA, Taxman FS, Walters ST. The relationship between electronic goal reminders and subsequent drug use and treatment initiation in a criminal justice setting. *Addiction Behaviour* 2015;**51**:51-6.

Springer 2017 *{published data only}*

Springer SA, Altice FL, Herme M, Paola A. Corrigendum to "Design and methods of a double blind randomized placebo-controlled trial of extended-release naltrexone for alcohol dependent and hazardous drinking prisoners with HIV who are transitioning to the community". *Contemporary Clinical Trials* 2017.

Stein 2011a *{published data only}*

Stein LAR, Lebeau R, Colby SM, Barnett NP, Golembeske C, Monti PM. Motivational interviewing for incarcerated adolescents: effects of depressive symptoms on reducing alcohol and marijuana use after release. *Journal of Studies on Alcohol and Drugs* 2011;**72**(3):497-506.

Sticca 2014 *{published data only}*

Sticca Victoria del Valle, Perrone Cecilia. Sickness awareness in subjects who have among the requirements imposed by the judge for their anticipated freedom treatment for substance use [Conciencia de enfermedad en sujetos que tienen entre los requisitos impuestos por el juez para su libertad anticipada tratamiento por el consumo de sustancias]. Córdoba: Universidad Católica de Córdoba, 2014.

Stillwell 2017 *{published data only}*

Stillwell G, Jones H, Shaw J, Farrell M, Marsden J. An evaluation of opioid substitution treatment in prison on risk of mortality in period immediately after prison: does leaving prison on OST reduce the risk of death?. *Drug and Alcohol Dependence* 2017;**171**:e197.

Strang 2000 *{published data only}*

Strang J, Marsden J, Cummins M, Farrell M, Finch E, Gossop M, et al. Randomized trial of supervised injectable versus oral methadone maintenance: report of feasibility and 6-month outcome. *Addiction* 2000;**95**(11):1631-45.

Strang 2013 *{published data only}*

Strang J, Bird SM, Parmar MK. Take-home emergency naloxone to prevent heroin overdose deaths after prison release: rationale and practicalities for the N-ALIVE randomized trial. *Journal of Urban Health: Bulletin of the New York Academy of Medicine* 2013;**90**(5):983-96.

Swogger 2016 *{published data only}*

Swogger MT, Conner KR, Caine ED, Trabold N, Parkhurst MN, Prothero LM, et al. A test of core psychopathic traits as a moderator of the efficacy of a brief motivational intervention for substance-using offenders. *Journal of Consulting and Clinical Psychology* 2016;**84**(3):248-58.

Tolou-Shams 2011 *{published data only}*

Tolou-Shams M, Houck C, Conrad SM, Tarantino N, Stein LAR, Brown LK. HIV prevention for Juvenile drug court offenders: a randomized controlled trial focusing on affect management. *Journal of Correctional Health Care* 2011;**17**(3):226-32.

Vagenas 2017 *{published data only}*

Vagenas P, Di Paola A, Herme M, Lincoln T, Skiest DJ, Altice FL, et al. Corrigendum to "An evaluation of hepatic enzyme elevations among HIV-infected released prisoners enrolled in two randomized placebo-controlled trials of extended release naltrexone". Journal of Substance Abuse Treatment. Pergamon Press - An Imprint of Elsevier Science, 2017; Vol. 77:44.

van Stelle 2004 *{published data only}*

Van Stelle KR, Moberg DP. Outcome data for MICA clients after participation in an Institutional therapeutic community. *Journal of Offender Rehabilitation* 2004;**39**(1):37-62.

Vaucher 2016 *{published data only}*

Vaucher P, Michiels W, Joris LS, Favre N, Perez B, Baertschi A, et al. Benefits of short educational programmes in preventing drink-driving recidivism: a ten-year follow-up randomised controlled trial. *International Journal of Drug Policy* 2016;**32**:70-6.

Villagra 2013 *{published data only}*

Villagra Lanza P, Menendez AG. Acceptance and commitment therapy for drug abuse in incarcerated women. *Psicothema* 2013;**25**(3):307-12.

Warren 2006 *{published data only}*

Warren E, Viney R, Shearer J, Shanahan M, Wodak A, Dolan K. Value for money in drug treatment: economic evaluation of prison methadone. *Drug and Alcohol Dependence* 2006;**84**(2):160-6.

Welsh 2014 *{published data only}*

Welsh WN, Zajac G, Bucklen KB. For whom does prison-based drug treatment work? Results from a randomized experiment. *Journal of Experimental Criminology* 2014;**10**(2):151-77.

Wimberly 2018 *{published data only}*

Wimberly AS. A yoga intervention for substance use and stress for returning citizens. *Dissertation Abstracts International Section A: Humanities and Social Sciences* 2018;**79**(1-A(E)):No Pagination Specified.

Witkiewitz 2014 *{published data only}*

Witkiewitz K, Warner K, Sully B, Barricks A, Stauffer C, Thompson BL, et al. Randomized trial comparing mindfulness-based relapse prevention with relapse prevention for women offenders at a residential addiction treatment center. *Substance Use and Misuse* 2014;**49**(5):536-46.

Wolff 2012 *{published data only}*

Wolff N, Frueh BC, Shi J, Schumann BE. Effectiveness of cognitive-behavioral trauma treatment for incarcerated women with mental illnesses and substance abuse disorders. *Journal of Anxiety Disorders* 2012;**26**(7):703-10.

Wooditch 2015 *{published data only}*

Wooditch A, Taxman F, Murphy A. Residential mobility and housing instability among justice-involved African-American opioid abusers. *Journal of Drug Issues* 2015;**146**:e26.

Wooditch 2017 *{published data only}*

Wooditch A, Sloas LB, Taxman FS. A multisite randomized block experiment on the seamless system of care model for drug-involved probationers. 2017; Vol. 47, issue 1:50-73.

Wright 2011 *{published data only}*

Wright NMJ, Sheard L, Adams CE, Rushforth BJ, Harrison W, Bound N, et al. Comparison of methadone and buprenorphine for opiate detoxification (LEEDS trial): a randomised controlled trial. *British Journal of General Practice* 2011;**61**(593):e772-80.

Zlotnick 2003 *{published data only}*

Zlotnick C, Najavits LM, Rohsenow DJ, Johnson DM. A cognitive-behavioral treatment for incarcerated women with substance abuse disorder and posttraumatic stress disorder: findings from a pilot study. *Behaviour Therapy* 2003;**25**(2):99-105.

Zlotnick 2009a *{published data only}*

Zlotnick C, Johnson J, Najavits LM. Randomized controlled pilot study of cognitive-behavioral therapy in a sample of incarcerated women with substance use disorder and PTSD. *Behavior Therapy* 2009;**40**(4):325-36.

References to ongoing studies

Baldus 2011 *{published data only}*

Baldus C, Miranda A, Weymann N, Reis O, More K, Thomasius R. "CAN Stop" - implementation and evaluation of a secondary group prevention for adolescent and young adult cannabis users in various contexts - study protocol. *BMC Health Services Research* 2011;**11**:80.

Tinland 2013 *{published data only}*

Tinland A, Fortanier C, Girard V, Laval C, Videau B, Rhenter P, et al. Evaluation of the Housing First program in patients with severe mental disorders in France: study protocol for a randomized controlled trial. *Trials* 2013;**14**(1):309.

VanDorn 2017 *{unpublished data only}*

Van Dorn RA, Desmarais SL, Rade CB, Burris EN, Cuddeback GS, Johnson KL, et al. Jail-to-community treatment continuum for adults with co-occurring substance use and mental disorders: study protocol for a pilot randomised controlled trial. 2017; Vol. 18, issue 1:365. [DOI: 10.1186/s13063-017-2088-z]

Additional references

Austin 1994

Austin CD, McLelland RW. Case management in human services: reflections on public policy. *Journal of Case Management* 1994;**6**:119-26.

Bogt 2006

Bogt T, Schmid H, Nic S, Fotiou A, Vollebergh W. Economic and cultural correlates of cannabis use among mid-adolescents 31 countries. *Addiction* 2006;**101**:241-51.

Butler 2011

Butler T, Indig D, Allnut S, Marmoon H. Co-occurring mental illness and substance use disorder among Australian prisoners. *Drug and Alcohol Review* 2011;**30**:188-94.

Chang 2015

Chang Z, Lichtenstein P, Larsson H, Fazel S. Substance use disorders, psychiatric disorders, and mortality after release from prison: a nationwide longitudinal cohort study. *Lancet Psychiatry* 2015;**2**:422-30.

Cunningham 2002

Cunningham A. Lessons learned from a randomized study of multisystemic therapy in Canada. 2002; from http://www.ifcc.on.ca/onestep.html.

Deeks 2017

Deeks JJ, Higgins JP, Altman DG, eds, on behalf of the Cochrane Statistical Methods Group. Chapter 9. Analysing data and undertaking meta-analyses. Higgins JPT, Churchill R, Chandler J, Cumpston MS, eds. Cochrane Handbook for Systematic Reviews of Interventions version 5.2.0 (updated June 2017). Available from www.training.cochrane.org/handbook. Cochrane, 2017.

Fazel 2002

Fazel S, Danesh J. Serious mental disorder in 23 000 prisoners: a systematic review of 62 surveys. *The Lancet* 2002;**359**:545-50.

Fazel 2012

Fazel S, Seewald K. Severe mental illness in 33 588 prisoners worldwide: systematic review and meta regression analysis. *British Journal of Psychiatry* 2012;**200**:364-73.

Fazel 2016

Fazel S, Hayes AJ, Bartellas K, Clerici M, Trestman R. Mental health of prisoners: prevalence, adverse outcomes and interventions. *Lancet Psychiatry* 2016;**3**:871-81.

Glase 2006

Glase LE, James DJ. Mental health problems of prison and jail inmates, Bureau Justice Statistics Special Report. US Department of Justice, Office of Justice Programs 2006; Vol. NCJ 213600.

Higgins 2011

Higgins JPT, Green S, eds. Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 (updated March 2011). The Cochrane Collaboration, 2011. Available from www.cochrane-handbook.org.

Lamb 1998

Lamb RH, Weinberger LE. Persons with severe mental illness in jails and prisons: a review. *Psychiatric Services* 1998;**49**:4.

Lipsey 2007

Lipsey M, Landenberger NA, Wilson SJ. Effects of cognitive-behavioral programs for criminal offenders: a systematic review. Campbell Collaboration 2007; Vol. 3, issue 6.

Littell 2005

Littell JH, Popa JH, Forsythe B. Multisystemmic therapy for social, emotional and behavioural problems in youth aged 10-17. Chichester: United Kingdom: Wiley, 2005.

Malouf 2014

Malouf ET, Schaefer KE, Witt EA, Moore KE, Stueiwg J, Tangney JP. The brief self-control scale predicts jail inmates recidivism, substance dependence and post release adjustment. *Personality and Social Psychology Bulletin* 2014;**40**:334-47.

Marlowe 2003b

Marlowe D, Elwork A, Festinger D, McLellan AT. Drug policy by popular referendum: this too shall pass. *Journal of Substance Abuse Treatment* 2003;**25**:213-21.

McMurran 2009

McMurran M. Motivational Interviewing with offenders. A systematic review. *Legal and Criminological Psychology* 2009;**14**:83-100.

Miller 1991

Miller WR, Rollnick S. Motivational Interviewing. Preparing People to Change Addictive Behaviour. New York: Guildford, 1991.

Mitchell 2012a

Mitchell O, Mackenzie LD, Wilson D. The effectiveness of incarcerated based drug treatment on criminal behaviour: a systematic review. Campbell Collaboration 2012; Vol. 8, issue 18.

Partridge 2004

Partridge S. Examining case management models for community sentences. http://www.cep-probation.org/uploaded_files/Partridge%20Report.pdf (accessed May 2014).

Pearson 1999

Pearson FS, Lipton DS. A meta-analytic review of the effectiveness of corrections-based treatment for drug abuse. *Prison Journal* 1999;**79**(4):384-410.

Perry 2006

Perry A, Coulton S, Glanville J, Godfrey C, Lunn J, McDougall C, et al. Interventions for drug-using offenders in the courts, secure establishments and the community. *Cochrane Database of Systematic Reviews* 2006, Issue 3. [DOI: 10.1002/14651858.CD005193.pub2]

Perry forthcominga

Perry AE, Martyn-St James M, Burns L, Hewitt C, Glanville JM, Abodja A, et al. Pharmacological interventions for drug-using offenders. Cochrane Database of Systematic Reviews issue 1. [DOI: 10.1002/14651858.CD010862]

Perryforthcomingc

Perry AE, Martyn-St James M, Burns L, Hewitt C, Glanville JM, Abodja A, et al. Interventions for female drug-using offenders. Cochrane Database of Systematic Reviews issue 1. [DOI: 10.1002/14651858.CD010901]

Prendergast 2003

Prendergast ML, Hall EA, Wexler HK. Multiple measures of outcome in assessing a prison-based drug treatment program. *Journal of Offender Rehabilitation* 2003;**37**:65-94.

Prendergast 2004

Prendergast ML, Hall EA, Wexler HK, Melnick G, Cao Y. Amity prison-based therapeutic community: 5-year outcomes. *Prison Journal* 2004;**84**(1):36-50.

Prendergast 2011

Prendergast M, Frisman, L. Sacks, J, Staton-Tindall, M. Greenwell, L. Hsiu-Ju Lin, Cartier. J. A multi-site, randomized study of strengths-based casemanagement with substance-abusing parolees.. *Journal of Experimental Criminology* 2011;**7**:225–253.

RevMan 2012 [Computer program]

The Nordic Cochrane Centre, The Cochrane Collaboration. Review Manager. Version 5.2. Copenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration, 2012.

Schunemann 2013

Schunemann H, Brozek J, Guyatt G, Oxman A, editors. GRADE handbook for grading quality of evidence and strength of recommendations. The GRADE Working Group, 2013. 2013; Vol. http://gdt.guidelinedevelopment.org/app/handbook/handbook.html.

Shonin 2013

Shonin E, Van Gordon W, Slade K, Griffiths MD. Mindfulness and other Buddist-derived interventions in correctional settings: a systematic review. *Aggression and Violent Behaviour* 2013;**18**(3):365-72.

Shufelt 2006

Sheufelt J, Cocozza J. Youth with mental disorders in the juvenile justice system: results from the multi-state prevalence study. Research and program brief, National Center for Mental Health and Juvenile Justice 2006.

Smedslund 2011

Smedslund G, Berg RC, Hammerstrøm KT, Steiro A, Leiknes KA, Dahl HM, et al. Motivational interviewing for substance abuse. Campbell Collaboration Systematic Review 2011; Vol. 7, issue 6.

Steadman 2009

Steadman HJ, Osher FC, Robbins C, Case B, Samuels S. Prevalence of serious mental illness among jail inmates. *Psychiatric Services* 2009;**60**:761-5.

Synder 2012

Synder EH, Lawrence CN, Dodge KA. The impact of system of care support in adherence to wraparound principles in child and family teams in child welfare in North Carolina. *Children and Youth Services Review* 2012;**34**:639-47.

Vasilaki 2006

Vasilaki E, Hosier SG, Cox WM. The efficacy of motivational interviewing as a brief intervention for excessive drinking. A meta-analytical review. *Alcohol and Alcoholism* 2006;**41**:328-35.

Waserman 2005

Wasserman GA, McReynolds LS, Ko SJ, Katz LM, Schwank J. Gender differences in psychiatric disorder for youths in juvenile probations. *American Journal of Public Health* 2005;**95**(1):131-7.

Wilson 2008

Wilson KJ. Literature Review: Wraparound Services for Juvenile and Adult Offender Populations. Davis, CA: Center for Public Policy Research, 2008.

References to other published versions of this review

Perry 2015

Perry AE, Neilson M, Martyn-St James M, Glanville JM, Woodhouse R, et al. Interventions for drug-using offenders with co-occurring mental illness. *Cochrane Database of Systematic Reviews* 2015, Issue 6. [DOI: 10.1002/14651858.CD010901]

* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Cosden 2003

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	235 adults Age not reported 50.2% male 70.6% European American Drug use not reported Alcohol use not reported 100% psychiatric history **Eligibility criteria:** adults charged with a crime or misdemeanour who were booked into county jail, had at least 1 prior booking, were diagnosed with a serious and pervasive mental illness, and were residents of the county involved. Pre-plea participants were required to have no previous offences involving violence; post-adjudication participants with prior violence were eligible if they were considered to no longer pose a threat
Interventions	Court-based sentencing and case management intervention vs treatment as usual **Experimental intervention** Psychosocial intervention: mental health treatment court (MHTC) consisting of case management and assertive community treatment (ACT) based on a case management model: weekly or bi-weekly court supervision and frequent contact with case managers, duration 18 months, followed by treatment as usual if required (n = 137) **Setting:** community **Length of treatment:** 18 months **Length of follow-up:** 6 months and 12 months

Cosden 2003 *(Continued)*

	Control: treatment as usual: traditional court proceedings and county mental health services as usual for at least 18 months, which was less intensive than the intervention (n = 98) **Setting:** community **Length of treatment:** 18 months **Length of follow-up:** 6 months and 12 months
Outcomes	Drug use (Addiction Severity Index, self-report) during the last month at 12 months' follow-up Re-arrests
Notes	**Funding:** this research was sponsored by a grant from the California State Board of Corrections, the Mentally Ill Offender Crime Reduction Grant Program **Contract/grant sponsor:** California State Board of Corrections **Conflict of interest:** no declaration of interest reported by study authors **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Random numbers table
Allocation concealment (selection bias)	Unclear risk	Not reported
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	Insufficient information to permit judgement
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	Insufficient information to permit judgement
Incomplete outcome data (attrition bias) All outcomes	High risk	25% of the initial population could not be located at the end of 12 months
Selective reporting (reporting bias)	Low risk	All study outcomes listed and reported in the paper; no evidence of a trial protocol

Cullen 2012

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	84 adults **Average age:** 35 years (SD 11.4) 100% male 52% African American

Cullen 2012 *(Continued)*

	100% psychiatric history **Eligibility criteria:** (a) a primary clinical diagnosis of psychotic disorder (schizophrenia, schizoaffective disorder, bipolar disorder, or other psychotic disorder); (b) history of violence; (c) not having participated in R&R or a similar programme previously; (d) not actively psychotic (score of 4 on each of the Positive and Negative Symptom Scale P items (PANSS; Kay, Opler, & Fiszbein, 2000); (e) absence of significant cognitive impairments (i.e. IQ70 or impairments likely to lead to inability to cope with the demands of the group); and (f) proficiency in English language sufficient to allow participation in the programme as judged by the treating team. Patients with comorbid personality or substance use disorders were not excluded
Interventions	Reasoning and rehabilitation vs treatment as usual **Experimental intervention:** psychosocial intervention: Reasoning and Rehabilitation (R&R) is a highly structured, manualised programme targeting social problem-solving skills and thinking styles. This programme is delivered over a minimum of 36 two-hour sessions and includes 8 core modules: problem-solving, assertiveness skills, social skills, negotiation skills, creative thinking, emotion management, values reasoning, and critical reasoning. The programme was delivered by experienced staff who had received training during intensive 5-day workshops provided by the programme authors. Sessions were held twice or three times weekly (5 to 8 patients per group). Unit staff were given the flexibility to deliver the original R&R programme or the revised programme (n = 44) **Setting:** medium secure forensic hospital **Length of treatment:** 36 two-hour sessions, 2 to 3 times per week. Participants attending a minimum of 30 sessions were considered 'completers' **Length of follow-up:** 12 months post intervention **Control:** treatment as usual; none of the sites provided any other interventions that were aimed at reducing violent or antisocial behavior throughout the trial (n = 40) **Setting:** medium secure forensic hospital **Length of treatment:** not reported **Length of follow-up:** 12 months post intervention
Outcomes	Urine drug screen for substance abuse
Notes	**Funding:** financial support provided by the NHS National Research and Development Programme on Forensic Mental Health Science, United Kingdom **Conflict of interest:** not reported **Country:** UK

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Method used for random sequence generation not reported
Allocation concealment (selection bias)	Unclear risk	Method used for concealed allocation not reported
Blinding of outcome assessment (detection bias) subjective outcomes	High risk	"Researchers who conducted assessments were not blinded to allocation status, as this information was often revealed in clinical notes or by patients themselves"

Cullen 2012 *(Continued)*

Blinding of outcome assessment (detection bias) objective outcomes	High risk	"Researchers who conducted assessments were not blinded to allocation status, as this information was often revealed in clinical notes or by patients themselves"
Incomplete outcome data (attrition bias) All outcomes	High risk	Although > 10% had missing data in both groups, 50% of the R&R group did not complete treatment
Selective reporting (reporting bias)	Low risk	Outcomes were represented in the paper; study authors specified primary and secondary outcomes and listed all outcomes in the analyses

Dakof 2015

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	112 juveniles 100 (89%) male Mean age (SD): not reported (age range reported as between 13 and 18 years) **Eligibility criteria:** participants were (a) between the ages of 13 and 18; (b) diagnosed with substance abuse or dependence based on a structured interview; (c) not actively suicidal, demonstrating psychotic symptoms, or diagnosed with pervasive developmental disorder or mental retardation; (d) not currently charged for sale of drugs, weapons, or violent offences, or sexual battery; and (e) after consultation with their attorney, voluntarily enrolled in drug court
Interventions	Multi-dimensional family therapy (MDFT) vs adolescent group-based treatment (AGT) **Experimental Intervention:** MDFT family-based treatment: therapists work individually with each family. Therapists work simultaneously in 4 interdependent treatment domains - adolescent, parent, family, and community. At various points throughout treatment, therapists meet alone with the adolescent, alone with the parent(s), or conjointly with the adolescent and parent(s), depending on the treatment domain and the specific problem being addressed (n = 55) **Setting:** juvenile drug court (JDC) sessions conducted in clinic and at home **Length of treatment:** 4 to 6 months - with 2 sessions per week (average of 9.4 hours per month) **Length of follow-up:** 6, 12, 18, and up to 24 months after baseline **Control:** AGT was a manual-guided intervention based on cognitive–behavioural therapy and motivational interviewing. Features and format were guided by research-supported principles and procedures and combine education, skills training, and social support (Center for Substance Abuse Treatment (CSAT)). Each session was structured, beginning with goal-setting/self-monitoring of goal attainment, and followed by didactic/experiential activities, group processing/reflection, and closure. One therapist led each session, with between 4 and 6 male and female adolescents participating. Groups were "open" (vs "closed") in that new members were admitted on a rolling basis (n = 57) **Setting:** juvenile drug court (JDC) sessions conducted in clinic **Length of treatment:** 4 to 6 months - with 3 sessions per week (average of 10.56 hours per month) **Length of follow-up:** 6, 12, 18, and up to 24 months after baseline
Outcomes	Drug consumption

Dakof 2015 *(Continued)*

	Number of arrests
Notes	**Funding:** the work reported was supported by the National Institute on Drug Abuse, Grant R01 DA 017478 **Conflict of Interest:** 2 study authors received financial compensation for their role as consultants and members of the Board of Directors of MDFT International. One study author received financial compensation for his role of Director on the MDFT Board **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Urn randomisation procedure to ensure equivalence
Allocation concealment (selection bias)	Unclear risk	Method used for allocating randomised participants to treatment groups not reported
Blinding of outcome assessment (detection bias) subjective outcomes	Low risk	Efforts were made to keep assessors unaware of study hypotheses and treatment assignments
Blinding of outcome assessment (detection bias) objective outcomes	Low risk	Efforts were made to keep assessors unaware of study hypotheses and treatment assignments
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	Study authors report that an intent-to-treat analysis was used and provide numbers withdrawing by group in a flow chart. However, statistical methods used for handling missing data are not reported
Selective reporting (reporting bias)	High risk	Not all outcomes are reported in the results. Two outcomes are reported in the methods section of the paper: graduation from drug court, and length of time on treatment; these are not included in the protocol

Johnson 2012

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	38 adults Average age: 35 years (SD 9.2) 100% female 18% Hispanic, 18% African American 58% cocaine dependence, 24% opiate dependence, 21% marijuana dependence, 21% sedative/hypnotic dependence 58% alcohol dependence 100% psychiatric history

Johnson 2012 *(Continued)*

	Criteria used for mental health diagnoses: "MDD as determined by the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I; First et al., 1996a) after at least 4 weeks of abstinence and prison substance use treatment" Description of mental health problem: major depressive disorder **Eligibility criteria:** primary major depressive disorder as determined by the Structured Clinical Interview for DSM-IV Axis I Disorders after at least 4 weeks of abstinence and prison substance use treatment, minimum 17-item Hamilton Depression Scale score of 18, substance use disorder 1 month before incarceration as determined by the SCID, 10 to 24 weeks away from prison release. Women with bipolar disorder and psychotic disorder were excluded
Interventions	Interpersonal psychotherapy vs psychoeducation attention-matched control **Experimental Intervention** Participants received manualised group and individual sessions in prison for treatment of substance misuse and mental health problems. Participants in both conditions also received 6 weekly post-release individual sessions to help maintain gains and address crises as they transitioned to the community. Session length varied between 60 and 75 minutes because of time taken to assemble women within the facilities, occasional early prison counts, and other facility logistics. In-prison treatment was condensed into 2 months because many incarcerated women serve short sentences (30, 60, 90, 180 days) (n = 19) **Setting:** prison **Length of treatment:** 60 to 75 minutes, 3 times a week for 8 weeks, plus pre/mid and post-group individual sessions and 6 weekly post-release individual sessions to support transition into the community **Length of follow-up:** end of treatment at 8 weeks **Control:** participants received attention-matched manualised in-prison and post-release psychoeducation, which is described as co-occurring mental health and substance use disorders (PSYCHOED). The psychoeducation condition was adapted from a class on co-occurring disorders for prisoners that had been used at the women's facilities in the past but was not being used at the time of the study. It was designed to be credible and engaging without focusing on the theorised active ingredients of interpersonal psychotherapy (e.g. focus on social support, relationships, life changes, analysis of communication, exploration of emotions). The stated purpose of PSYCHOED was to help women become informed and to empower consumers of mental health treatment services. The 24 in-prison sessions focused on the meaning of dual diagnosis, women's experience with dual diagnosis, major depression, bipolar disorder, each of the anxiety disorders, post-traumatic stress disorder, personality disorders, psychotic disorders, eating disorders, and self-care. Sessions for each disorder described symptoms (including relevant self-report tests), interactions between the disorder and substance use, effects of the disorder on women in prison (including film clips and written stories), and disorder-specific medication and psychosocial treatment options. When a woman in the group had symptoms of a disorder, the group discussed her treatment options and preferences. The 6 post-release sessions focused on women's symptoms and connection with various mental health and substance use treatment options in the community. Study treatments took place in addition to prison treatment as usual. Treatment as usual consisted of prison residential or day treatment for substance use disorder (typically 16 to 30 hours per week) for all participants and prison mental health treatment as usual for most participants (n = 19) **Setting:** prison **Length of treatment:** 60 to 75 minutes, 3 times a week for 8 weeks, plus pre/mid and post-group individual sessions and 6 weekly post-release individual sessions to support transition into the community **Length of follow-up:** end of treatment at 8 weeks
Outcomes	Relapse defined as using drugs on at least 10% of non-incarcerated days or any positive breath test/urine drug screen

Johnson 2012 *(Continued)*

Notes	**Funding:** work supported by US National Institute of Drug Abuse **Conflicts of interest:** no declarations of interest were noted by study authors **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Wave randomisation used with at least 8 weeks between allocations to avoid contamination across prison wings
Allocation concealment (selection bias)	Low risk	Random sequence generated by person independent of rest of study. Allocation adequately concealed from principal investigator and research assistants. An independent individual concealed the assignment of each wave before the study started. After the intake assessment was complete, the principal investigator unsealed the waves treatment assignment
Blinding of outcome assessment (detection bias) subjective outcomes	Low risk	Adequate blinding throughout study. Research assistants who conducted follow-up assessment at 3 months after prison release were kept blind to the condition
Blinding of outcome assessment (detection bias) objective outcomes	Low risk	Adequate blinding throughout the study. Research assistants who conducted follow-up assessment at 3 months after prison release were kept blind to the condition
Incomplete outcome data (attrition bias) All outcomes	Low risk	No loss to follow-up; intention-to-treat analysis
Selective reporting (reporting bias)	High risk	Did not report on SCID-I/SCID-II, Trauma History Questionnaire, or Timeline Followback

Lanza 2014

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	50 adults Average age: overall mean 33.2 (SD 7.2) (range 21 to 49) CBT 35.2 (mean); ACT 31.1 (mean); control 33.1 (mean) 100% female NR % white % drug users: CBT 100%, ACT 83.3%, control 100% % alcohol users: CBT 0%, ACT 16.7%, control 100% % psychiatric history: 86% had at least 1 mental disorder **Eligibility criteria:** met diagnostic criteria for current substance use disorder; serving sentence longer than 6 months

Lanza 2014 *(Continued)*

Interventions	**Cognitive-behavioural therapy vs acceptance commitment therapy** **Experimental Intervention one:** cognitive-behavioural therapy (CBT) was used to change behaviour through cognitive restructuring, whereby therapist works with offender to identify thoughts that cause distress and uses cognitive and behavioural therapy to alter resulting behaviour. The main outcome of the CBT intervention was increased abstinence from drug use; this was measured an corroborated by urine analysis testing (n = 19) **Setting:** prison **Length of treatment:** 16 weekly group sessions lasting 90 minutes each **Length of follow-up:** 6, 12, 18 months **Experimental Intervention two:** acceptance commitment therapy (ACT) seeks to undermine the grip of the literal verbal content of cognition that provokes avoidance behaviour and constructs an alternative context in which behaviour aligned with one's values is more likely to occur. Sessions involve both experiential and didactic learning to enable clients to experience and understand the size key ACT processes. ACT helps offenders to respond to previously avoided events in new ways and uses validation and empowerment. ACT was aimed at increasing substance use abstinence within the prison population. After treatment offenders were assessed by the therapist, follow-up was conducted at 6 months (n = 18) **Setting:** prison **Length of treatment:** 16 weekly group sessions lasting 90 minutes each **Length of follow-up:** 6, 12, 18 months **Control:** received a mental health assessment at the same time as experimental groups. After 6-month follow-up, they received treatment. Offenders received a re-educational programme for inmates during incarceration (n = 13) **Setting:** prison **Length of treatment:** 16 weekly group sessions lasting 90 minutes each **Length of follow-up:** 6, 12, 18 months
Outcomes	Abstinence from drug use, corroborated by urinalysis Percentage of abstinence
Notes	**Funding:** work supported by Trust for the Promotion of Scientific Applied Research and Technology, in Asturias, Spain **Conflict of Interest:** no conflict of interest reported by study authors **Country:** Spain

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Use of random numbers table noted
Allocation concealment (selection bias)	Unclear risk	No information reported
Blinding of outcome assessment (detection bias)	Low risk	Urinalysis was used to corroborate self-reported abstinence

Lanza 2014 *(Continued)*

subjective outcomes		
Blinding of outcome assessment (detection bias) objective outcomes	Low risk	The clinician who conducted baseline assessments was also in charge of administering the measures
Incomplete outcome data (attrition bias) All outcomes	Low risk	Similiar loss to follow-up across all 3 groups; a total of 9/50 lost (n = 4 for ACT, n = 3 for CBT, n = 2 for control)
Selective reporting (reporting bias)	Low risk	Protocol measures and information reported in the methods section of the paper were comparable

Malouf 2017

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	40 adults Average age: overall mean 37.2 (15.7) Ethinicity not reported % drug users: not reported % alcohol users: not reported % psychiatric history: REVAMP group 10.8% and TAU group 16.4% diagnosed at time one **Eligibility criteria:** participants were 40 adult males incarcerated at a suburban jail in the mid-Atlantic region of the USA. Inclusion criteria were assignment to the jail's general population (i.e. not solitary confinement), language proficiency in English, post-sentencing status, and a release date that would allow adequate time for study participation. The group does contain those with a borderline personality disorder. No details are provided about how the sample was diagnosed
Interventions	The Re-entry Values and Mindfulness Program (REVAMP) vs treatment as usual **Experimental intervention:** the Re-entry Values and Mindfulness Program (REVAMP) is a manualised group intervention for jail inmates nearing release into the community. It incorporates and adapts elements from several mindfulness-based interventions (MBIs), including acceptance and commitment therapy, mindfulness-based relapse prevention (MBRP), and dialectical behavioural therapy (DBT). REVAMP begins with a focus on personal values identification to reduce defensiveness and increase motivation for treatment. Next, it uses a variety of exercises to reduce experiential avoidance and thereby alleviate psychological suffering. These exercises include metaphors from ACT, distress tolerance skills from DBT, and mindfulness meditation practices from MBRP. Treatment closes with return to a focus on valued living, and participants are engaged in values clarification and goal identification exercises. Throughout REVAMP, mindfulness meditation practice is encouraged through centring exercises at the beginning and end of sessions, in addition to mindfulness meditation homework assignments (n = 21) **Setting:** jail **Length of treatment:** 2 times per week for 90 minutes for a total of 4 weeks **Length of follow-up:** up to 3 years post release **Control:** treatment as usual: included programmes that were normally available within the prison such as anger management, financial planning, health education, GED preparation, religious services, substance abuse treatment, employability skills, and computer skills (n = 19)

Malouf 2017 *(Continued)*

	Setting: jail **Length of treatment:** not reported **Length of follow-up:** up to 3 years post release
Outcomes	Arrest frequency 3 years post release Time to first arrest/offence 3 years post release Frequency of marijuana use 3 months post release
Notes	**Funding:** grant from the Center for Consciousness and Transformation (CCT) at George Mason University; 2 grants from the National Institute on Drug Abuse (NIDA) (#R01 DA14694 and #F31DA029397) **Conflict of interest:** not reported **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Using a computerised random number generator
Allocation concealment (selection bias)	Unclear risk	Not specified
Blinding of outcome assessment (detection bias) subjective outcomes	Low risk	All data were collected by trained research assistants who were blind to treatment conditions
Blinding of outcome assessment (detection bias) objective outcomes	Low risk	All data were collected by trained research assistants who were blind to treatment conditions
Incomplete outcome data (attrition bias) All outcomes	High risk	At follow-up, over 50% of the group had been lost to follow-up in the intervention and treatment as usual arms. Reduction from n = 21 to n = 11 in the intervention arm. Less loss to follow-up was shown in the treatment as usual group, which was reduced from n = 19 to n = 13. Study authors do not mention how they treated missing data in their analysis plan
Selective reporting (reporting bias)	Low risk	Measures listed in the methods section of the paper

McCarter 2016

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	51 juveniles Average age: overall mean 14.5 years Ethinicity: 70% African American % drug users:not reported

McCarter 2016 *(Continued)*

	% alcohol users:not reported % psychiatric history:not reported **Eligibility criteria:** first-time offenders, ages 11 to 16, with assignment to an agency attorney. Exclusion criteria were prior offences or a diversion contract, current mental health commitments, undisciplined designation, or limited English proficiency
Interventions	Family wrap-around forensic social work services and existing legal defence service vs treatment as usual comparison group **Experimental intervention:** the wrap-around approach provides a collaborative and co-ordinated response of service providers who organise and streamline service delivery. This includes attending any team meeting with or on behalf of youth, providing service referrals, and connecting families and guardians to local providers for appropriate mental health, substance abuse, and educational services and support. When needed, they also arrange for physical health services at the local clinic that served the adolescents' medical home (n = 22) **Setting:** court and community **Length of treatment:** not reported **Length of follow-up:** 6 months after baseline and up to 12 months during the study **Control:** received only legal defence service (n = 25) **Setting:** court and community **Length of treatment:** not reported **Length of follow-up:** 6 months after baseline and up to 12 months during the study
Outcomes	Recidivism
Notes	**Funding:** supported in part by a Faculty Research Grant at the University of North Carolina Charlotte **Conflict of interest:** not reported **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Individuals were assigned case numbers via a random number generator
Allocation concealment (selection bias)	Unclear risk	Insufficient information was provided
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	Not reported
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	Not reported
Incomplete outcome data (attrition bias) All outcomes	High risk	Study authors describe intention-to-treat analysis. However, there is a significant imbalance between missing data in the intervention and control groups, with attrition rates of less than 10% and greater than 70%, respectively. Out-

McCarter 2016 *(Continued)*

		come data were reported for completers only, and 18/25 (72%) withdrew from the control group
Selective reporting (reporting bias)	Unclear risk	A study protocol is not reported to check for selective reporting. Prespecified outcomes are reported, although without much detail. It is not clear where "number of new offences" was stated beforehand

Sacks 2004

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	236 adults Mean age 34.3 years (SD 8.8) 100% male 49% white 100% drug-using 32% alcohol-using 100% psychiatric history **Eligibility criteria:** prisoners who had both a serious mental disorder and a substance use disorder
Interventions	Secure establishment-based therapeutic community vs treatment as usual **Experimental intervention:** the Personal Reflections initiative is a modified TC residential treatment programme that uses a cognitive-behavioural curriculum within a foundation of TC principles to change attitudes and lifestyles in 3 critical areas: substance abuse, mental illness, and criminal thinking and behaviour. The intervention group received a mixture of psychoeducational classes, cognitive-behavioural methods, medication, and group therapy. Aftercare included mental health counselling, medication and psychiatric services, and basic skills (n = 142) **Setting:** prison **Length of treatment:** 5 days per week for 4 to 5 hours per day for up to 12 months. Voluntary aftercare following the TC intervention included attendance for between 3 and 7 days per week for 3 to 5 hours per day for up to 6 months **Length of follow-up:** 12 months post prison release **Control:** received intensive psychiatric services with medication, weekly individual therapy and counselling, and specialised groups of cognitive-behavioural work, anger management, therapy and education, domestic violence, parenting, and weekly drug/alcohol therapy, with a 72-hour course on substance abuse education and relapse prevention over 12 months (n = 94) **Setting:** prison **Length of treatment:** a variety of activities including a 72-hour course up to 12 months **Length of follow-up:** 12 months post prison release
Outcomes	Criminal activity regarding a new offence (official records) Incarceration for a new offence (official records) Drug use (self-report)
Notes	**Funding:** contract/grant sponsor: National Institute on Drug Abuse (NIDA); contract/grant number: P50 DA7700.0003 **Conflict of interest:** no declaration of interest reported by study authors

Sacks 2004 *(Continued)*

Country: USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Methods used for random sequence generation not reported
Allocation concealment (selection bias)	Unclear risk	Method used for concealment not reported
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	No information on blinding reported
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	No information on blinding reported
Incomplete outcome data (attrition bias) All outcomes	Low risk	Some differences between groups: at follow-up, 82% for the (I) group and 69% for the (C) group. ITT was performed and missing data were added to the data set
Selective reporting (reporting bias)	Unclear risk	Protocol for trial not identified. Measures reported in the methods of the paper provide some information and concur with the outcomes reported in the results section of the paper

Sacks 2008

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	573 adult women Mean age 35.6 (SD 7.5) 100% female 47.8% white 99% drug-using **Eligibility criteria:** female inmates with at least 6 months remaining until parole with serious substance abuse problems requiring treatment and presenting a minimum/medium security risk
Interventions	Therapeutic community programme vs cognitive-behavioural intervention **Experimental intervention:** the therapeutic community group received a modified intervention for male inmates with co-occurring serious mental and substance use disorders. The intervention involved a 6-month tenure in a separate residential building, with programme activities supplemented by peer-led activities on weekends, and a further 4 hours per day. The programme followed therapeutic community principles, with additional gender-specific aspects (n = 257) **Setting:** prison **Length of treatment:** 5 days per week for 4 hours per day (and supplemented on the weekend with additional 4 hours per day); average time spent was 6.5 months **Length of follow-up:** 6, 12, and 18 months post prison release

Sacks 2008 *(Continued)*

	Control: the Intensive Outpatient Program is the standard treatment that the Colorado Department of Corrections offers to all female offenders who have been classified as substance abusers. This intervention is designed to address substance abuse and criminality, with focus on prevention of relapse and recidivism. The Intensive Outpatient Program substance abuse treatment curriculum consists of a 90-hour course, presented in an educational format (Strategies for Self-Improvement and Change, Wanburg & Milkman, 1998), utilising a cognitive-behavioural format to address underlying issues of substance use/abuse and criminal behaviour. Women in the programme can participate in multiple other services facility-wide, including mental health assessments (n = 211) **Setting:** prison **Length of treatment:** 2 days per week for 2 hours per day. Duration was approximately between 6 and 9 months **Length of follow-up:** 6, 12, and 18 months post prison release
Outcomes	Criminal activity, arrest, and drug-related activity (self-reported) Criminal record data (% incarcerated, mean days to incarceration) Self-reported illegal drug use
Notes	**Funding:** work supported by US Department of Health and Human Services, National Institutes of Health, National Institute on Drug Abuse **Conflict of interest:** no declarations of interest are noted by study authors **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	No information other than "were randomly assigned"
Allocation concealment (selection bias)	Unclear risk	No information provided
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	No information about whether assessors were blind
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	No information about whether assessors were blind
Incomplete outcome data (attrition bias) All outcomes	Unclear risk	No loss to follow-up for re-incarceration outcome, but loss to follow-up for other outcomes unclear Differences noted between data collected via self-report and official records. Intention-to-treat analysis used to analyse outcome measures
Selective reporting (reporting bias)	Low risk	No evidence of selective reporting

Sacks 2011

Methods	**Study design:** RCT

Sacks 2011 *(Continued)*

	Study grouping: parallel-group
Participants	127 adults Mean age 38.2 years (SD 9.9) 100% male 56% white 100% co-occurring substance use and mental health problems Alcohol use: unknown 61.8% with clinical level of psychological distress as measured by Global Severity Index **Eligibility criteria:** male; diagnosed with co-occurring mental and substance use disorders; had participated in 1 of 2 prison substance abuse treatment programmes; approved for placement in a community corrections facility and accepted by the provider agency for placement in a community corrections facility
Interventions	Re-entry modified therapeutic community vs parole supervision case management **Experimental intervention:** consisted of a residential programme of 6 months' duration. Participants had progressively increasing independence, eventually being responsible for providing counsel, guidance, and coaching for new members. Participants also worked in the community and saved money for independent living. There were weekly group psychoeducational classes to address the interrelationship between mental disorders and substance abuse, as well as various other group and individual counselling sessions. Medication monitoring and psychiatric services were provided on-site. Participants were given assistance with housing and encouragement for employment (n = 71) **Setting:** prison **Length of treatment:** 3 to 7 days per week, 3 to 5 hours each day for 6 months **Length of follow-up:** 12 months post prison release **Control:** participants were released to a community corrections facility and left the facility during the day to go to work, have treatment, and report to parole officers. Control consisted of outreach and engagement activities, brokering community-based services, and direct provision of support and counselling services. There was a weekly relapse prevention group and daily medication monitoring. Psychiatric and substance abuse services were provided by outside agencies (community parole officers helped clients choose). Unlike in the intervention, criminal thinking and behaviour were not specifically addressed. The average participant attended 1 group per week and had monthly psychiatric assessments (n = 56) **Setting:** transition from prison into the community **Length of treatment:** 1 session per week for up to 6 months **Length of follow-up:** 12 months post prison release.
Outcomes	Rate of re-incarceration Number of days until re-incarceration Involvement in self-reported criminal activity Number of days until self-reported criminal activity Alcohol and drug offences (self-reported) Other offences (self-reported)

Sacks 2011 *(Continued)*

Notes	**Funding:** this project received support from the Department of Health and Human Services, National Institutes of Health, NIDA (Grant 5R01DA019982-[01-05]) **Conflict of interest:** no declarations of interest reported by study authors **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Random number list
Allocation concealment (selection bias)	Unclear risk	Not reported
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	No information about blinding presented
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	No information about blinding presented
Incomplete outcome data (attrition bias) All outcomes	Low risk	Intent-to-treat analyses conducted
Selective reporting (reporting bias)	Unclear risk	Outcomes reported in the methods section of the paper and in the outcomes list. No protocol obtained

Stein 2011

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	189 adolescents Mean age 17.12 years (SD 1.10). Range 14 to 19 years 85.7% male 32.8% white 88.9% marijuana use 63% alcohol use 68.5% had significant depressive symptoms during past week at baseline (CES-D) **Eligibility criteria:** 14 to 19 years old, sentenced to juvenile correctional facility for 4 to 12 months, engaged in at least monthly marijuana use or binge-drinking in the year before incarceration, used any alcohol or marijuana in the month before incarceration (or before committing the offence leading to incarceration)
Interventions	Secure establishment-based motivational interviewing vs relaxation treatment

Stein 2011 *(Continued)*

	Experimental intervention: the intervention was designed specifically to reduce substance use and its associated risks and consequences. Treatment was manualised. Motivational interviewing focused on empathy, not arguing, developing discrepancy, self-efficacy, and personal choice (n = 96) **Setting:** prison **Length of treatment:** 90-minute baseline intervention and 60-minute booster session within 2 weeks of release **Length of follow-up:** 3 months post release **Control:** involved relaxation techniques as well as advice on risky behaviours associated with substance use. Intervention included progressive muscle relaxation, use of guided imagery, and feedback on use of techniques (n = 85) **Setting:** prison **Length of treatment:** 90-minute baseline intervention and 60-minute booster session within 2 weeks of release **Length of follow-up:** 3 months post release
Outcomes	Mean number of joints per day Mean percentage of days used marijuana
Notes	**Funding:** this research was supported by National Institute on Drug Abuse Grant R01 #13375 (to L.A.R. Stein, principal investigator) **Conflict of interest:** no declaration of interest reported by study authors **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	"Random assignment using a random number table"
Allocation concealment (selection bias)	Unclear risk	"Random number was placed in an envelope and opened by research staff after the baseline assessment" No information given about whether envelopes were sequentially numbered, opaque, or sealed
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	Follow-up assessments at 3 months were completed blind by researchers but not at any other time point
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	Follow-up assessments at 3 months were completed blind by researchers but not at any other time point
Incomplete outcome data (attrition bias) All outcomes	Low risk	8/71 were lost to follow-up in the RMTC group, and 9/56 were lost to follow-up in the PSCM group. ITT was conducted for the secondary outcome of criminal activity
Selective reporting (reporting bias)	Unclear risk	Measures reported in the paper but protocol could not be located

Sundell 2008

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	156 adolescents Mean age 15.00 years (SD 1.35) 61% male 30/156 Asian % drug use not reported % alcohol use not reported **Eligibility criteria:** target group was defined as youths 12 to 17 years of age who fulfilled the criteria for a clinical diagnosis of conduct disorder according to the *Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition, Text Revision) (DSM–IV–TR;* American Psychiatric Association, 2000) and whose parent(s) or parent surrogate(s) were motivated to engage in an intervention
Interventions	Multi-systemic treatment (MST) Intervention vs treatment as usual **Experimental intervention:** MST is an intensive family- and community-based treatment for adolescents with serious clinical problems that include criminal behaviour, violence, substance abuse, and serious emotional disturbance (e.g. Henggeler, Sheidow, & Lee; in press). In the home and community, MST provides service delivery based on the family's needs. Therapists are available to families 24 hours a day, 7 days a week. By working with parents, teachers, and others, MST aims to restructure a youth's ecology to support prosocial development and decrease delinquent behaviour (n = 79) **Setting:** community **Length of treatment:** average between 4 and 6 months' duration **Length of follow-up:** 7 months after referral **Control:** youths assigned to the group receiving TAU were referred back to social services for determination of intervention. The most common intervention received by this group was individual counselling (1 to 2 hours every other week) provided by the case manager or a private counsellor and financed by the Social Welfare Administration (n = 20). The second most common was family therapy (n = 16). Other TAU services included mentorship with non-professional volunteers spending time with youths (normally 10 hours a month on 2 or more occasions; n = 12), out-of home care, and primarily residential care (n = 8). Less frequent services were aggression replacement training (n = 4), addiction treatment (n = 2), and special education services (n = 2). Thirteen youths in this group received no services. Of those 64 receiving services, 16 (25%) were prematurely interrupted (i.e. original services were replaced for a new intervention during 7-month follow-up) (n = 77) **Setting:** community **Length of treatment:** not reported **Length of follow-up:** 7 months after referral
Outcomes	Self-report delinquency Alcohol and drug consumption Alcohol Use Disorder Identification Test (AUDIT) Drug Use Disorder Indentification Test (DUDIT)

Sundell 2008 *(Continued)*

Notes	**Funding:** support for this research was provided by the Institute for Evidence-Based Social Work Practice, National Board of Health and Welfare, Sweden, Mobilisering mot narkotika, Ministry of Health and Social Affairs, Sweden, and the cities of Go teborg, Halmstad, Malmo, and Stockholm, Sweden **Conflict of interest:** none of the study authors had any financial interest in MST **Country:** Sweden

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Computer-generated randomisation
Allocation concealment (selection bias)	Low risk	Quote: "After research staff received completed instruments from both the youths and parents, research staff opened a sealed and numbered envelope that contained the results of the computer- generated randomization for that specific youth. In a central location separate from the data collection locations, the contents of the sealed envelopes were determined before the referral process began. The principal investigator was the only member of the research team to have access to the randomization sequence"
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	Not reported
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	Not reported
Incomplete outcome data (attrition bias) All outcomes	Low risk	The number of missing subjects at post measure varied between 14 (9%) and 19 (12%) for youths, and between 12 (8%) and 18 (12%) for guardians, with the exception of Guardian's Mental Health, for which the number of missing subjects was 30 (19%)
Selective reporting (reporting bias)	Unclear risk	No protocol available. Measures reported in the methods section of the paper matched outcomes in the results

Wexler 1999

Methods	**Study design:** RCT **Study grouping:** parallel-group
Participants	715 adults Mean age 30.9 years (SD 7.4) 100% male 37.8% white 100% drug-using Alcohol use not reported 100% psychiatric history **Eligibility criteria:** offenders with a drug problem who were 9 to 14 months from parole; offenders convicted of arson or sexual crimes against minors were not eligible
Interventions	Therapeutic community (TC) and voluntary residential aftercare vs no-treatment waiting list control

Wexler 1999 *(Continued)*

	Experimental intervention: TC included a 2- to 3-month orientation phase including clinical assessment of residential needs and problem areas and planning of interventions and goals. During the second phase, 5- to 6-month treatment stage, residents were provided opportunities to earn positions of increasing responsibility. Groups and counselling sessions focused on self-discipline, self-worth, self-awareness, respect for authority, and acceptance of guidance for problem areas. During the re-entry phase (taking up to 3 months), residents used their planning and decision-making skills and worked with programme and parole staff to prepare for their return to the community. Graduates of the scheme were given the opportunity to participate in a community-based TC for up to 12 months (n = 247) **Setting:** prison and release into the community TC **Length of treatment:** total duration (including aftercare option) up to 24 months **Length of follow-up:** 12, 24, and 36 months **Control:** no-treatment waiting list control group (n = 290) **Setting:** prison **Length of treatment:** total duration up to 14 months **Length of follow-up:** 12, 24, and 36 months
Outcomes	Incarceration (official records) Arrest for any offence (self-report) Arrest for a drug offence (self-report) Drug use (self-report)
Notes	**Funding:** this study was a co-operative effort by the Center for Therapeutic Community Research at National Development and Research Institutes, Inc., and the California Department of Corrections and Rehabilitation Office of Substance Abuse Programs. The evaluation was funded by the National Institute of Drug Abuse, Grant #PAODA07700-01 **Conflict of interest:** not reported **Country:** USA

Risk of bias

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	Participants were "randomly" assigned and stratified by ethnic makeup
Allocation concealment (selection bias)	Unclear risk	No information provided
Blinding of outcome assessment (detection bias) subjective outcomes	Unclear risk	No information on blinding provided
Blinding of outcome assessment (detection bias) objective outcomes	Unclear risk	No information on blinding provided
Incomplete outcome data (attrition bias)	Low risk	ITT analyses conducted

Wexler 1999 *(Continued)*
All outcomes

Selective reporting (reporting bias)	Unclear risk	Protocol not obtained. Measures reported in the methods section of the paper comparable with outcomes in the results section

ACT: acceptance and commitment therapy; AGT: adolescent group therapy; AUDIT: Alcohol Use Disorder Identification Test; CBT: cognitive-behavioural therapy; CES-D: Center for Epidemiologic Studies Depression Scale; CSAT: Center for Substance Abuse Treatment; DBT: dialectical behavioural therapy; *DSM-IV: Diagnostic and Statistical Manual of Mental Disorders*, *Fourth Edition*; DUDIT: Drug Use Disorder Identification Test; ITT: intention-to-treat; JDC: juvenile drug court; MBI: mindfulness-based intervention; MBRP: mindfulness-based relapse prevention; MDD: major depressive disorder; MDFT: multi-dimensional family therapy; MHTC: mental health treatment court; MI: motivational interviewing; MST: multi-systemic treatment; PANSS: Positive and Negative Symptoms Scale; R&R: Reasoning & Rehabilitation; RCT: randomised controlled trial; SCID: Structured Clinical Interview for DSM Disorders; SD: standard deviation; TAU: treatment as usual; TC: therapeutic community.

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Alemagno 2009	Not measuring drug or crime outcomes
Alemi 2010	Not a mental health population
Allen 2017	Not measuring drug or crime outcomes
Althoff 2013	Not a randomised controlled trial
Anonymous 1989	Not a randomised controlled trial
Anonymous 2004	Not an offender population
Anonymous 2014	Conference proceeding only, without useful data
Anonymous 2015	Conference proceeding only, without useful data
Anonymous 2015a	Not a randomised controlled trial
Anonymous 2016	Conference proceeding only, without useful data
Anonymous 2016a	Not measuring drug or crime outcomes
Anonymous 2016b	Not a randomised controlled trial
Bailey 1994	Not a randomised controlled trial
Barrett 2015	Not measuring drug or crime outcomes
Bartlett 2015	Not measuring drug or crime outcomes
Bawor 2014	Not an offender population
Bazazi 2017	Not a randomised controlled trial
Berman 2004	Not a mental health population
Bermudez 2014	Not a randomised controlled trial

Study	Reason for exclusion
Brahen 1976	Not a randomised controlled trial
Brodie 2009	Not a mental health population
Brovko 2017	Not measuring drug or crime outcomes
Brown 2013	Not a mental health population
Brown 2014	Not a randomised controlled trial
Burraston 2014	Not a randomised controlled trial
Bustos 2016	Not measuring drug or crime outcomes
Calcaterra 2014	Not a randomised controlled trial
Calsyn 2005	Not an offender population
Carrieri 2017	Not an offender population
Carroll 2006	Not a mental health population
Carroll 2012	Not a mental health population
Chandler 2016	Not a mental health population
Chaple 2014	Not a mental health population
Chaple 2016	Not a mental health population
Cheesman 2016	Not a randomised controlled trial
Cihlar 2014	Not a randomised controlled trial
Clair 2013	Not a randomised controlled trial
Clair-Michaud 2016	Not measuring drug or crime outcomes
Clark 2002	Not a randomised controlled trial
Clayton 2013	Not measuring drug or crime outcomes
Compton 2016	Not a randomised controlled trial
Coulton 2017	Not a mental health population
Curtis 2015	Not a randomised controlled trial
Czuchry 2000	Not measuring drug or crime outcomes
Czuchry 2003	Not measuring drug or crime outcomes
D'Amico 2013	Not a mental health population
Dakof 2010	Not a mental health population

Study	Reason for exclusion
Davis 2015	Not a randomised controlled trial
Day 2006	Not an offender population
Demaret 2015	Not an offender population
Di Paola 2014	Not a mental health population
Dickson 2017	Not a randomised controlled trial
Dolan 2003	Not a mental health population
Dolan 2005	Not a mental health population
Dole 1969	Not a mental health population
Doyle 2015	Not a randomised controlled trial
Doyle 2016	Not a randomised controlled trial
Dunlop 2017	Not an offender population
Easton 2007	Not a randomised controlled trial
Easton 2017	Not a mental health population
Egg 2000	Not a mental health population
Franck 2012	Not a mental health population
Friedmann 2015	Conference proceeding only, without useful data
Friedmann 2017	Not a mental health population
Ginsberg 2012	Not measuring drug or crime outcomes
Ginsberg 2015	Not measuring drug or crime outcomes
Ginsberg 2015a	Not measuring drug or crime outcomes
Gisev 2015	Not a randomised controlled trial
Gisev 2015a	Not a randomised controlled trial
Gisev 2015b	Not a randomised controlled trial
Goddard-Eckrich 2018	Not measuring drug or crime outcomes
Goorden 2015	Not an offender population
Gordon 2014	Not measuring drug or crime outcomes
Gordon 2015	Not a randomised controlled trial
Gordon 2017	Not a mental health population

Study	Reason for exclusion
Gordon 2017a	Not a mental health population
Gottfredson 2005	Not a mental health population
Haig 2003	Not a randomised controlled trial
Hanlon 1975	Not a mental health population
Hanlon 1977	Not a mental health population
Harada 2012	Not measuring drug or crime outcomes
Heimer 2006	Not a randomised controlled trial
Henderson 2010	Not a mental health population
Henderson 2016	Not a mental health population
Hendriks 2011	Not an offender population
Henggeler 2006	Not a mental health population
Herrman 2016	Not an offender population
Himelstein 2014	Not measuring drug or crime outcomes
Himelstein 2015	Not a randomised controlled trial
Hoffman 1996	Not an offender population
Holloway 2006	Not a mental health population
Hser 2013	Not an offender population
Jalali 2017	Not measuring drug or crime outcomes
Jason 2007	Not an offender population
Jason 2015	Not a mental health population
Jason 2016	Not a randomised controlled trial
Jerrell 1995	Not an offender population
Joe 1997	Not an offender population
Kearley 2018	Not a mental health population
Kelly 2016	Not measuring drug or crime outcomes
Kinlock 2007	Not a mental health population
Kinlock 2009	Not a mental health population
Knight 2016	Not measuring drug or crime outcomes

Study	Reason for exclusion
Knudsen 2014	Not measuring drug or crime outcomes
Knudsen 2016	Not a randomised controlled trial
Kongsakon 2005	Not measuring drug or crime outcomes
Konstenius 2014	Not a mental health population
Kopak 2015	Not a randomised controlled trial
Krebs 2017	Not a randomised controlled trial
Kua 2014	Not an offender population
Kubiak 2016	Not a randomised controlled trial
Kurland 1975	Not a mental health population
Kurniasanti 2014	Not a randomised controlled trial
Lee 2011	Not measuring drug or crime outcomes
Lee 2013	Not a randomised controlled trial
Lee 2014	Not measuring drug or crime outcomes
Lee 2014b	Not measuring drug or crime outcomes
Lee 2014c	Conference proceedings only, without useful data
Lee 2015	Conference proceedings only, without useful data
Lee 2015a	Not a mental health population
Lee 2015b	Not a mental health population
Lee 2016	Not a mental health population
Lee 2016a	Not a mental health population
Lehman 2015	Not measuring drug or crime outcomes
Lerch 2017	Not a mental health population
Liddle 2011	Not measuring drug or crime outcomes
Lintzeris 2006	Not an offender population
Little 1993	Not an offender population
Lo 2012	Not a mental health population
Lobmann 2007	Not a mental health population
Luciano 2014	Not an offender population

Study	Reason for exclusion
Magura 2009	Not a mental health population
March 2006	Not a mental health population
Marinelli-Casey 2008	Not a randomised controlled trial
Marlowe 2008	Not a mental health population
Marlowe 2009	Not a mental health population
Marsch 1998	Systematic review
Martin 2010	Not measuring drug or crime outcomes
Martin 2011	Not an offender population
Martin 2014	Not an offender population
Martin 2015	Not measuring drug or crime outcomes
Martin 2017	Not an offender population
Mazerolle 2000	Not an offender population
McAuliffe 1990	Not an offender population
McCollister 2014	Not a randomised controlled trial
McCollister 2015	Conference proceeding only, without useful data
McCollister 2016	Not an offender population
McCollister 2017	Not a randomised controlled trial
McDonald 2016	Not a mental health population
McKenzie 2012	Not a mental health population
Meade 2017	Not a mental health population
Metrebian 2015	Not an offender population
Mitchell 2013	Not an offender population
Mitchell 2014	Not an offender population
Murphy 2017	Not a mental health population
Nemes 1999	Not a mental health population
Nirenberg 2013	Not measuring drug or crime outcomes
Nirenberg 2013a	Not measuring drug or crime outcomes
Nosyk 2010	Not an offender population

Study	Reason for exclusion
Nyamathi 2014	Not a randomised controlled trial
Nyamathi 2014a	Not a randomised controlled trial
Nyamathi 2015	Not measuring drug or crime outcomes
Nyamathi 2016	Not a randomised controlled trial
Nyamathi 2017a	Not a mental health population
O'Brien 2015	Not a randomised controlled trial
O'Brien 2017	Not a randomised controlled trial
Owens 2016	Not measuring drug or crime outcomes
Owens 2017	Not measuring drug or crime outcomes
Page 1982	Not measuring drug or crime outcomes
Parmar 2017	Not a mental health population
Pettus-Davis 2017	Not measuring drug or crime outcomes
Pierce 2018	Not a randomised controlled trial
Pijl 2017	Not a randomised controlled trial
Pitre 1997	Not measuring drug or crime outcomes
Pitre 1998	Not measuring drug or crime outcomes
Poblete 2017	Not an offender population
Prendergast 2015	Not measuring drug or crime outcomes
Prendergast 2017	Not a mental health population
Rich 2015	Not a mental health population
Roll 2005	Not an offender population
Rounsaville 2008	Not a mental health population
Rowe 2007	Not an offender population
Rowland 2008	Not a randomised controlled trial
Sajatovic 2013	Not an offender population
Saxena 2014	Not measuring drug or crime outcomes
Schaeffer 2014	Not a mental health population
Schwartz 2014	Not a mental health population

Study	Reason for exclusion
Schwartz 2016	Not a mental health population
Schwartz 2016a	Not a mental health population
Schwartz 2016b	Not a mental health population
Scott 2017	Not measuring drug or crime outcomes
Seitz-Brown 2015	Conference proceedings only, without useful data
Shaul 2016	Not a mental health population
Sheard 2007	Not a randomised controlled trial
Sheard 2009	Not a mental health population
Sheard 2009a	Not a mental health population
Shearer 2003	Not an offender population
Shearer 2007	Not a randomised controlled trial
Sinha 2003	Not a mental health population
Smith 2017	Not an offender population
Somers 2013	Not measuring drug or crime outcomes
Spohr 2015	Not measuring drug or crime outcomes
Springer 2017	Not measuring drug or crime outcomes
Stein 2011a	Not a mental health population
Sticca 2014	Not a randomised controlled trial
Stillwell 2017	Not a randomised controlled trial
Strang 2000	Not an offender population
Strang 2013	Halted part of the way through
Swogger 2016	Not a mental health population
Tolou-Shams 2011	Not measuring drug or crime outcomes
Vagenas 2017	Not measuring drug or crime outcomes
van Stelle 2004	Not a randomised controlled trial
Vaucher 2016	Not measuring drug or crime outcomes
Villagra 2013	Not a mental health population
Warren 2006	Not an offender population

Study	Reason for exclusion
Welsh 2014	Not measuring drug or crime outcomes
Wimberly 2018	Not measuring drug or crime outcomes
Witkiewitz 2014	Not measuring drug or crime outcomes
Wolff 2012	Not a randomised controlled trial
Wooditch 2015	Not a randomised controlled trial
Wooditch 2017	Not measuring drug or crime outcomes
Wright 2011	Not a mental health population
Zlotnick 2003	Not measuring drug or crime outcomes
Zlotnick 2009a	Not a mental health population

RCT: randomised controlled trial

Characteristics of ongoing studies *[ordered by study ID]*

Baldus 2011

Trial name or title	"CAN Stop" - Implementation and evaluation of a secondary group prevention for adolescent and young adult cannabis users in various contexts - study protocol
Methods	The CAN Stop study is a 4-armed randomised wait list controlled trial. The 4 arms are needed for the different help system settings, in which the CAN Stop training programme is evaluated: (a) the drug addiction aid and youth welfare system, (b) the outpatient medical system, (c) the in-patient medical system, and (d) prisons for juvenile offenders. Data are collected at 3 points: before and after training or treatment as usual and 6 months after completion of either intervention
Participants	Young adult cannabis users
Interventions	(a) the drug addiction aid and youth welfare system, (b) the outpatient medical system, (c) the in-patient medical system, and (d) prisons for juvenile offenders
Outcomes	Sociodemographics; Living situation; Social network; Problems with school, police, debts; Education; Prior counselling and therapies; Screening for acute psychosis; Subscale of the Diagnostisches Interview psychischer Störungen (DIPS; diagnostic Interview for psychiatric disorders); Substance use history; Society for Addiction Research and Therapy); Severity of dependence; Severity of dependence scale (Psychosocial adjustment; Youth self-report; Young adult self-report) (participants aged 18 to 21); Expected positive and negative effects of cannabis use; Comprehensive Cannabis Expectancy Questionnaire (CCEQ); Relationship to friends and peers; Questionnaire for health-related quality of life (Kiddo-KINDL Revised); Family relationships; Motivation for change in cannabis use; Questionnaire to protocol the willingness for change; Personal goals with regard to changes in substance use; Self-efficacy with regard to cannabis abstinence or limited cannabis use; Satisfaction with training; Peer resistance regarding cannabis use
Starting date	Not reported
Contact information	cbaldus@uke.uni-hamburg.de
Notes	Trial registration: ISRCTN: ISRCTN57036983

Tinland 2013

Trial name or title	Evaluation of the Housing First program in patients with severe mental disorders in France: study protocol for a randomised controlled trial
Methods	Prospective randomised trial designed to assess the impact of a Housing First intervention on health outcomes and costs over a period of 24 months on homeless people with severe mental illness, compared to treatment as usual. The study is being conducted in 4 cities in France: Lille, Marseille, Paris, and Toulouse
Participants	Inclusion criteria are as follows: over 18 years of age, absolutely homeless or in precarious housing, possessing a 'high' level of need: diagnosis of schizophrenia or bipolar disorder and moderate to severe disability according to the Multnomah Community Ability Scale (score ≤ 62) and at least 1 of the following 3 criteria: (1) having been hospitalised for mental illness 2 or more times in any single year over the preceding 5 years; (2) comorbid alcohol or substance use; and (3) having been recently arrested or incarcerated. A total of 300 individuals per group will be included
Interventions	Housing First Intervention or Treatment As Usual; the Housing First intervention provides immediate access to independent housing and community care
Outcomes	Primary outcome criterion is use of high-cost health services (i.e. number of hospital admissions and number of emergency department visits) during the 24-month follow-up period. Secondary outcome measures include health outcomes, social functioning, housing stability, and contact with police services. An evaluation of the cost-effectiveness and cost utility of Housing First will also be conducted
Starting date	The study started to recruit participants in August 2011; recruitment is ongoing
Contact information	pascal.auquier@univ-amu.fr
Notes	

VanDorn 2017

Trial name or title	Jail-to-community treatment continuum for adults with co-occurring substance use and mental disorders: study protocol for a pilot randomised controlled trial
Methods	Adaptations to DDMI and IGT were guided by the Risk-Need-Responsivity model and the National Institute of Corrections' implementation competencies; development of the implementation framework and communication protocols were guided by the Evidence-Based Interagency Implementation Model for community corrections and the Inter-organizational Relationship model, respectively. Implementation and evaluation of protocols and adapted interventions will occur via an open trial and a pilot randomised trial. The clinical intervention consists of 2 in-jail DDMI sessions and 12 in-community IGT sessions. Twelve adults with CODs and 4 clinicians will participate in the open trial to evaluate the acceptability and feasibility of, and fidelity to, the interventions and research and communication protocols. The pilot controlled trial will be conducted with 60 inmates who will be randomised to either DDMI-IGT or treatment as usual. Baseline assessment will be conducted in jail, and 4 community-based assessments will be conducted during a 6-month follow-up period. Implementation, clinical, public health, and treatment preference outcomes will be evaluated
Participants	Inmate participants will be broadly representative of adults with co-occurring mental and substance use disorders in a large urban county jail
Interventions	Dual-diagnosis motivational interviewing (DDMI) and integrated group therapy (IGT) vs treatment as usual

VanDorn 2017 *(Continued)*

Outcomes	6 and 12 months HIV treatment (HIV-1 RNA levels, CD4 count, ART adherence, retention in care), substance abuse (time to relapse to opioid use, % opioid negative urine samples, opioid craving), adverse side effects and HIV risk behaviour (sexual and drug-related risks) The public health relevance is that outcomes from this study will establish the efficacy, safety, and tolerability of pharmacological therapy using naltrexone treatment among HIV+s and will establish depot-naltrexone treatment as an effective, evidence-based treatment for opioid dependence for released HIV+ prisoners
Starting date	2012
Contact information	Yale University
Notes	

ART: Antiretroviral therapy; COD: co-occurring disorders; NTX: naltrexone.

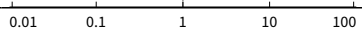
DATA AND ANALYSES

Comparison 1. Therapeutic community and aftercare vs treatment as usual

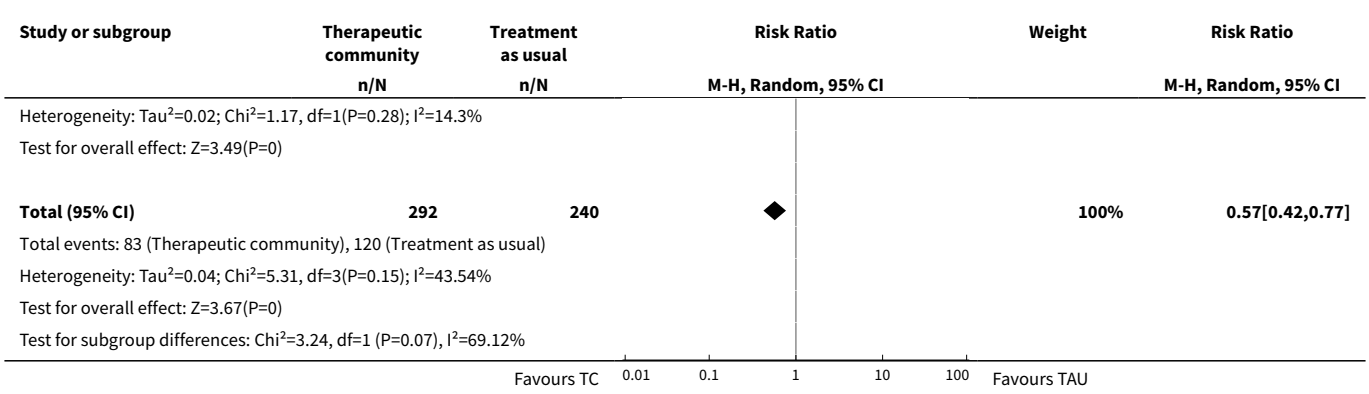
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Criminal activity	2	532	Risk Ratio (M-H, Random, 95% CI)	0.57 [0.42, 0.77]
1.1 Any criminal activity	2	266	Risk Ratio (M-H, Random, 95% CI)	0.67 [0.53, 0.84]
1.2 Re-incarceration	2	266	Risk Ratio (M-H, Random, 95% CI)	0.40 [0.24, 0.67]

Analysis 1.1. Comparison 1 Therapeutic community and aftercare vs treatment as usual, Outcome 1 Criminal activity.

Study or subgroup	Therapeutic community n/N	Treatment as usual n/N	Risk Ratio M-H, Random, 95% CI	Weight	Risk Ratio M-H, Random, 95% CI
1.1.1 Any criminal activity					
Sacks 2004	35/75	43/64		37.74%	0.69[0.52,0.93]
Sacks 2011	28/71	35/56		32.76%	0.63[0.44,0.9]
Subtotal (95% CI)	**146**	**120**		**70.49%**	**0.67[0.53,0.84]**
Total events: 63 (Therapeutic community), 78 (Treatment as usual)					
Heterogeneity: Tau^2=0; Chi^2=0.17, df=1(P=0.68); I^2=0%					
Test for overall effect: Z=3.49(P=0)					
1.1.2 Re-incarceration					
Sacks 2004	7/75	21/64		11.7%	0.28[0.13,0.63]
Sacks 2011	13/71	21/56		17.81%	0.49[0.27,0.89]
Subtotal (95% CI)	**146**	**120**		**29.51%**	**0.4[0.24,0.67]**
Total events: 20 (Therapeutic community), 42 (Treatment as usual)					



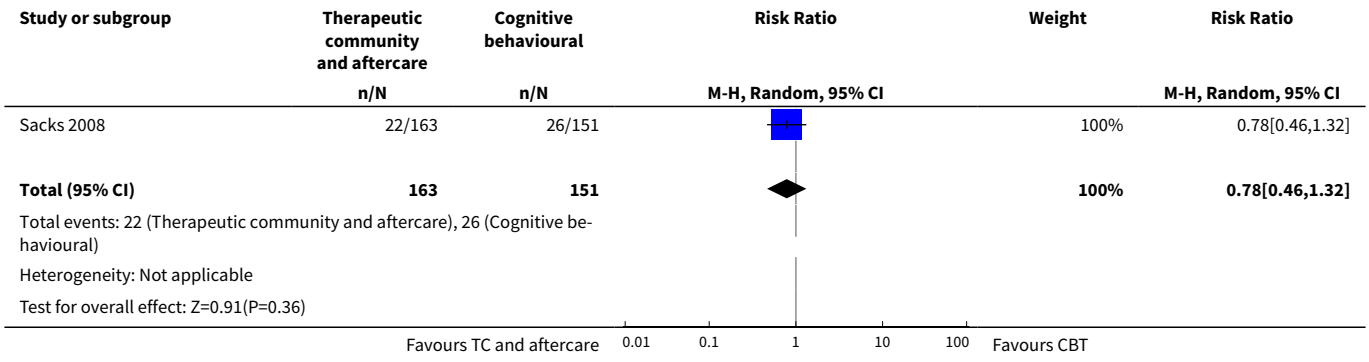
Favours TC — Favours TAU



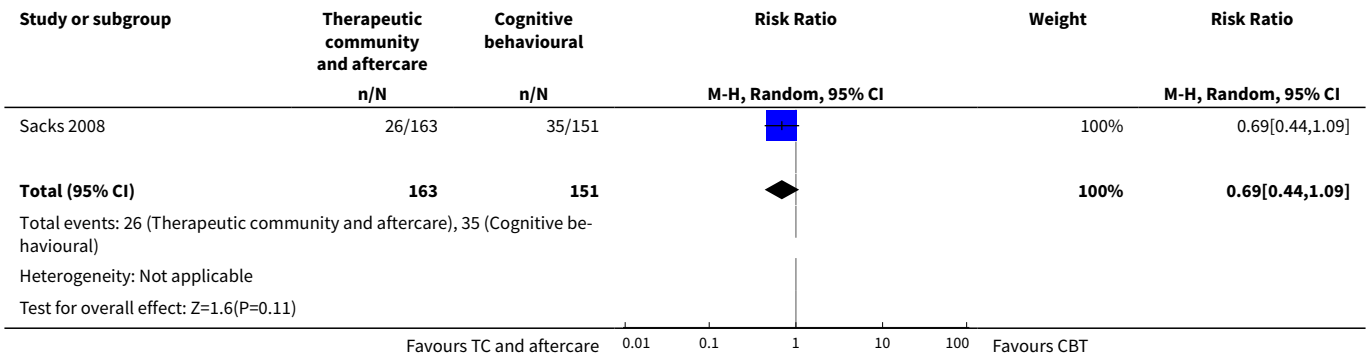
Comparison 2. Therapeutic community and aftercare vs cognitive-behavioural therapy

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Self-reported drug use at 6 months	1	314	Risk Ratio (M-H, Random, 95% CI)	0.78 [0.46, 1.32]
2 Arrested any for 6 months	1	314	Risk Ratio (M-H, Random, 95% CI)	0.69 [0.44, 1.09]
3 Criminal activity at 6 months	1	314	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.52, 1.05]
4 Drug-related crime	1	314	Risk Ratio (M-H, Random, 95% CI)	0.87 [0.56, 1.36]

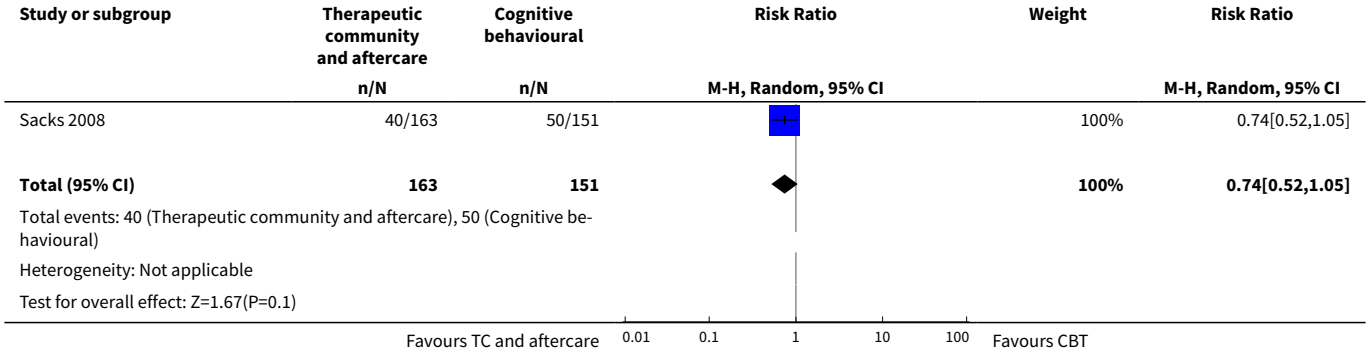
Analysis 2.1. Comparison 2 Therapeutic community and aftercare vs cognitive-behavioural therapy, Outcome 1 Self-reported drug use at 6 months.



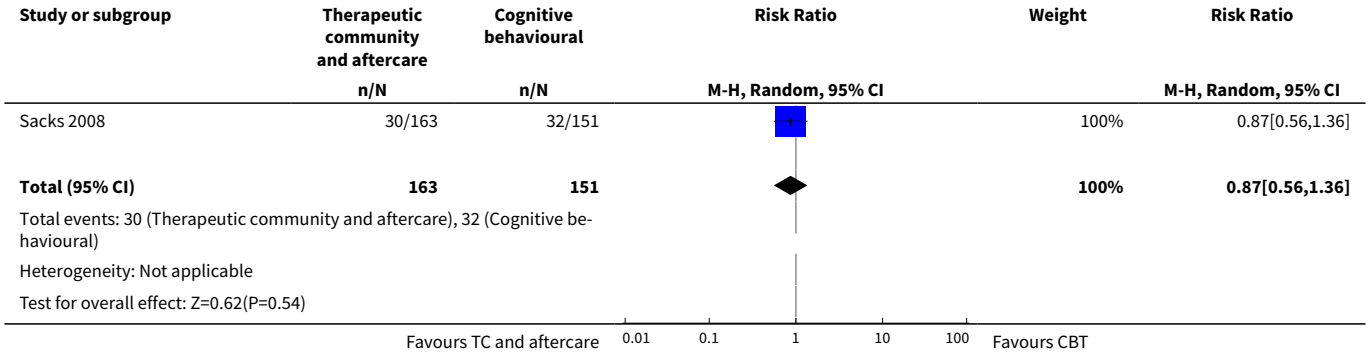
Analysis 2.2. Comparison 2 Therapeutic community and aftercare vs cognitive-behavioural therapy, Outcome 2 Arrested any for 6 months.



Analysis 2.3. Comparison 2 Therapeutic community and aftercare vs cognitive-behavioural therapy, Outcome 3 Criminal activity at 6 months.



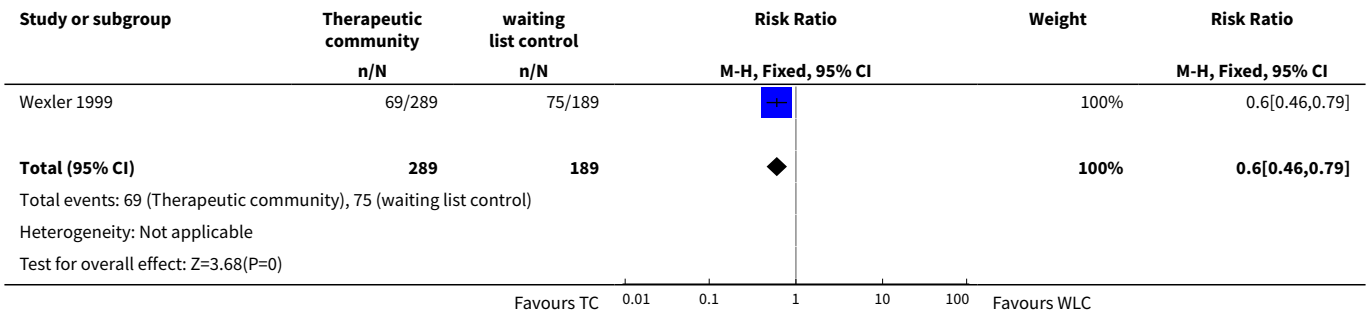
Analysis 2.4. Comparison 2 Therapeutic community and aftercare vs cognitive-behavioural therapy, Outcome 4 Drug-related crime.



Comparison 3. Therapeutic community vs waiting list control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Re-incarceration at 36 months	1	478	Risk Ratio (M-H, Fixed, 95% CI)	0.60 [0.46, 0.79]

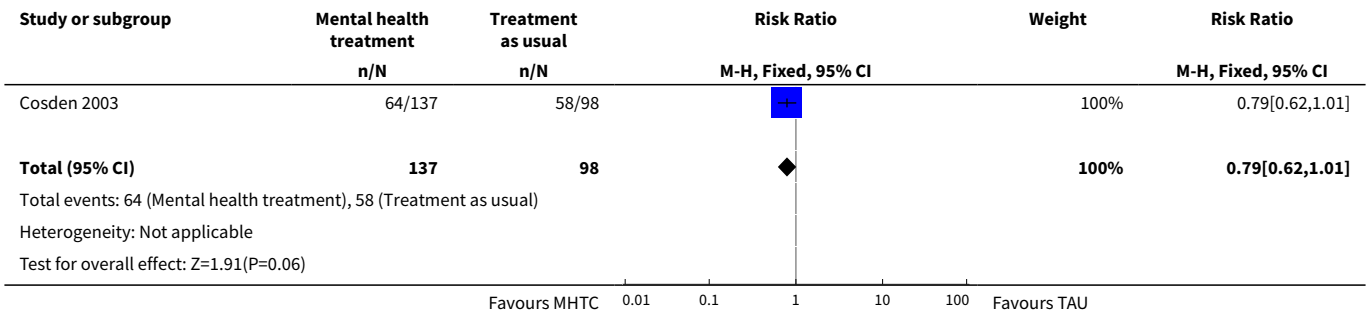
Analysis 3.1. Comparison 3 Therapeutic community vs waiting list control, Outcome 1 Re-incarceration at 36 months.



Comparison 4. Mental health treatment court with assertive case management vs treatment as usual

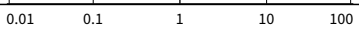
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Committing a new crime	1	235	Risk Ratio (M-H, Fixed, 95% CI)	0.79 [0.62, 1.01]
2 Re-incarceration to jail at 12 months	1	235	Risk Ratio (M-H, Fixed, 95% CI)	1.06 [0.91, 1.24]
3 ASI drug use at 12 months	1	235	Mean Difference (IV, Fixed, 95% CI)	0.0 [-0.03, 0.03]

Analysis 4.1. Comparison 4 Mental health treatment court with assertive case management vs treatment as usual, Outcome 1 Committing a new crime.



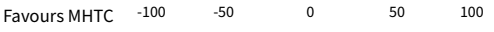
Analysis 4.2. Comparison 4 Mental health treatment court with assertive case management vs treatment as usual, Outcome 2 Re-incarceration to jail at 12 months.

Study or subgroup	Mental health treatment n/N	Treatment as usual n/N	Risk Ratio M-H, Fixed, 95% CI	Weight	Risk Ratio M-H, Fixed, 95% CI
Cosden 2003	104/137	70/98		100%	1.06[0.91,1.24]
Total (95% CI)	**137**	**98**		**100%**	**1.06[0.91,1.24]**
Total events: 104 (Mental health treatment), 70 (Treatment as usual)					
Heterogeneity: Not applicable					
Test for overall effect: Z=0.76(P=0.45)					



Analysis 4.3. Comparison 4 Mental health treatment court with assertive case management vs treatment as usual, Outcome 3 ASI drug use at 12 months.

Study or subgroup	Mental health treatment N	Mean(SD)	Treatment as usual N	Mean(SD)	Mean Difference Fixed, 95% CI	Weight	Mean Difference Fixed, 95% CI
Cosden 2003	137	0.1 (0.1)	98	0.1 (0.1)		100%	0[-0.03,0.03]
Total ***	**137**		**98**			**100%**	**0[-0.03,0.03]**
Heterogeneity: Not applicable							
Test for overall effect: Not applicable							

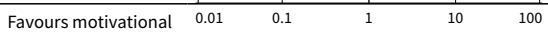


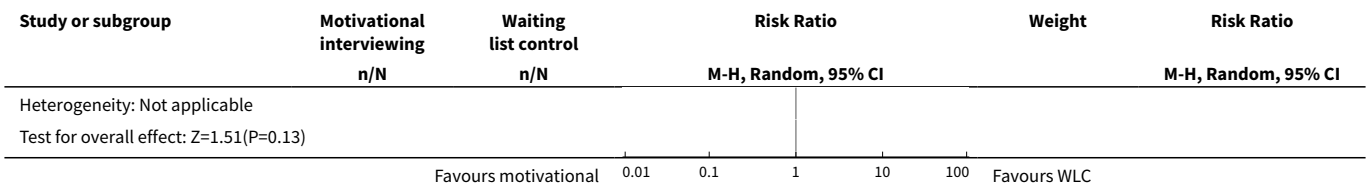
Comparison 5. Motivational interviewing and cognitive skills vs waiting list control

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Abstinence from drug use at 6 months	1	31	Risk Ratio (M-H, Random, 95% CI)	2.89 [0.73, 11.43]
2 ASI drug score at 6 months	1	31	Mean Difference (IV, Random, 95% CI)	-0.04 [-0.37, 0.29]

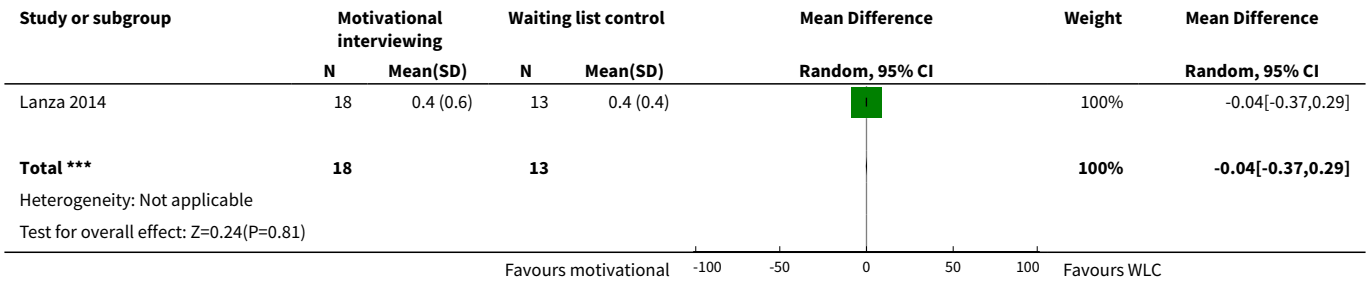
Analysis 5.1. Comparison 5 Motivational interviewing and cognitive skills vs waiting list control, Outcome 1 Abstinence from drug use at 6 months.

Study or subgroup	Motivational interviewing n/N	Waiting list control n/N	Risk Ratio M-H, Random, 95% CI	Weight	Risk Ratio M-H, Random, 95% CI
Lanza 2014	8/18	2/13		100%	2.89[0.73,11.43]
Total (95% CI)	**18**	**13**		**100%**	**2.89[0.73,11.43]**
Total events: 8 (Motivational interviewing), 2 (Waiting list control)					





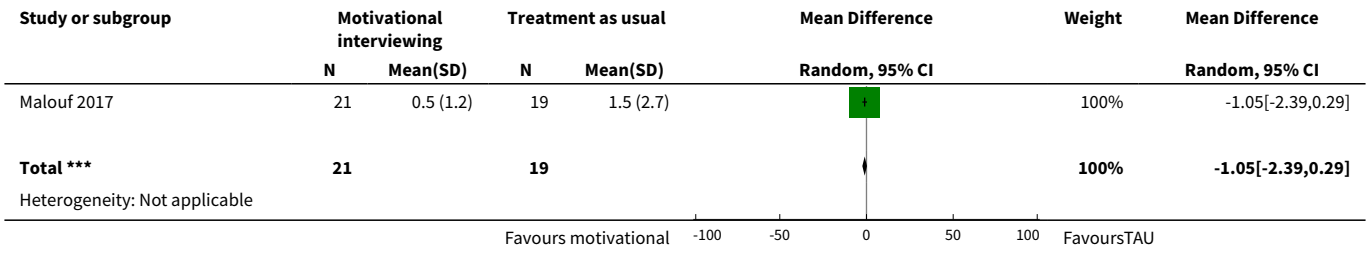
Analysis 5.2. Comparison 5 Motivational interviewing and cognitive skills vs waiting list control, Outcome 2 ASI drug score at 6 months.



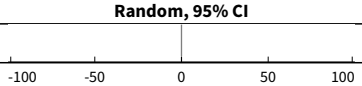
Comparison 6. Motivational interviewing and cognitive skills vs treatment as usual

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Marjuana frequency at 3 months	1	40	Mean Difference (IV, Random, 95% CI)	-1.05 [-2.39, 0.29]
2 Arrest frequency 3 years post release	1	31	Mean Difference (IV, Random, 95% CI)	-0.66 [-1.31, -0.01]
3 Time to first arrest or offence 36 months post	1	31	Mean Difference (IV, Fixed, 95% CI)	0.87 [-0.12, 1.86]
4 Positive drug screen at 12 months	1	84	Mean Difference (IV, Fixed, 95% CI)	-0.70 [-3.50, 2.10]

Analysis 6.1. Comparison 6 Motivational interviewing and cognitive skills vs treatment as usual, Outcome 1 Marjuana frequency at 3 months.

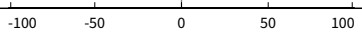


Study or subgroup	Motivational interviewing		Treatment as usual		Mean Difference	Weight	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Random, 95% CI		Random, 95% CI
Test for overall effect: Z=1.54(P=0.12)							



Analysis 6.2. Comparison 6 Motivational interviewing and cognitive skills vs treatment as usual, Outcome 2 Arrest frequency 3 years post release.

Study or subgroup	Motivational interviewing		Treatment as usual		Mean Difference	Weight	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Random, 95% CI		Random, 95% CI
Malouf 2017	16	0.8 (0.8)	15	1.5 (1.1)		100%	-0.66[-1.31,-0.01]
Total ***	**16**		**15**			**100%**	**-0.66[-1.31,-0.01]**
Heterogeneity: Not applicable							
Test for overall effect: Z=1.99(P=0.05)							



Analysis 6.3. Comparison 6 Motivational interviewing and cognitive skills vs treatment as usual, Outcome 3 Time to first arrest or offence 36 months post.

Study or subgroup	Motivational interviewing		Treatment as usual		Mean Difference	Weight	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Fixed, 95% CI		Fixed, 95% CI
Malouf 2017	16	2.5 (1.4)	15	1.6 (1.5)		100%	0.87[-0.12,1.86]
Total ***	**16**		**15**			**100%**	**0.87[-0.12,1.86]**
Heterogeneity: Not applicable							
Test for overall effect: Z=1.72(P=0.09)							

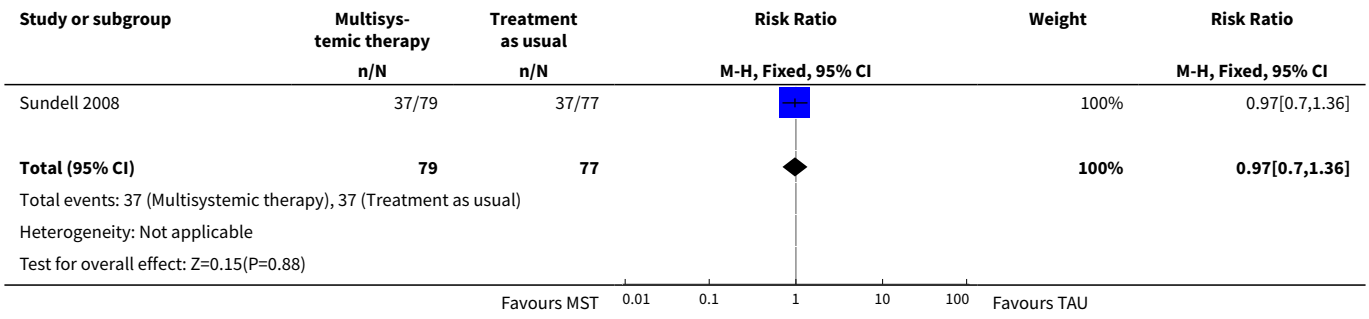
Analysis 6.4. Comparison 6 Motivational interviewing and cognitive skills vs treatment as usual, Outcome 4 Positive drug screen at 12 months.

Study or subgroup	Motivational interviewing		Treatment as usual		Mean Difference	Weight	Mean Difference
	N	Mean(SD)	N	Mean(SD)	Fixed, 95% CI		Fixed, 95% CI
Cullen 2012	44	2.6 (6.2)	40	3.3 (6.9)		100%	-0.7[-3.5,2.1]
Total ***	**44**		**40**			**100%**	**-0.7[-3.5,2.1]**
Heterogeneity: Not applicable							
Test for overall effect: Z=0.49(P=0.62)							

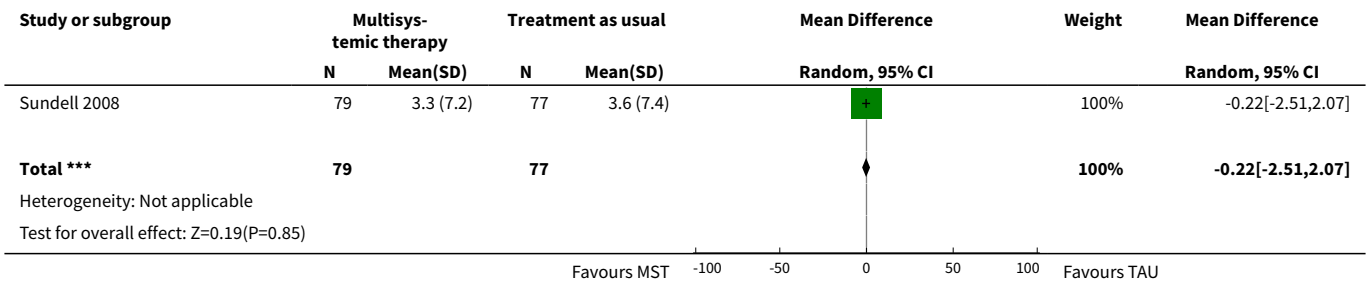
Comparison 7. Multi-systemic therapy vs treatment as usual

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Arrest by police	1	156	Risk Ratio (M-H, Fixed, 95% CI)	0.97 [0.70, 1.36]
2 DUDIT scores	1	156	Mean Difference (IV, Random, 95% CI)	-0.22 [-2.51, 2.07]

Analysis 7.1. Comparison 7 Multi-systemic therapy vs treatment as usual, Outcome 1 Arrest by police.



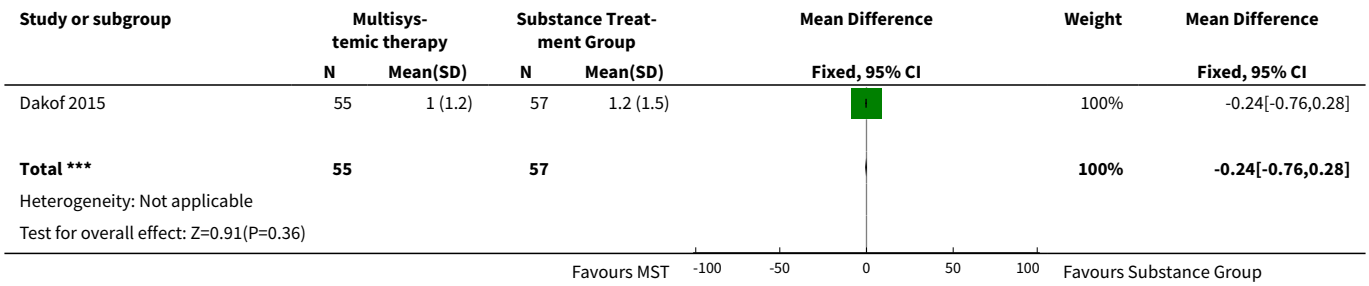
Analysis 7.2. Comparison 7 Multi-systemic therapy vs treatment as usual, Outcome 2 DUDIT scores.



Comparison 8. Multi-systemic therapy vs adolescent substance treatment group

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Arrests between 6 and 24 months	1	112	Mean Difference (IV, Fixed, 95% CI)	-0.24 [-0.76, 0.28]

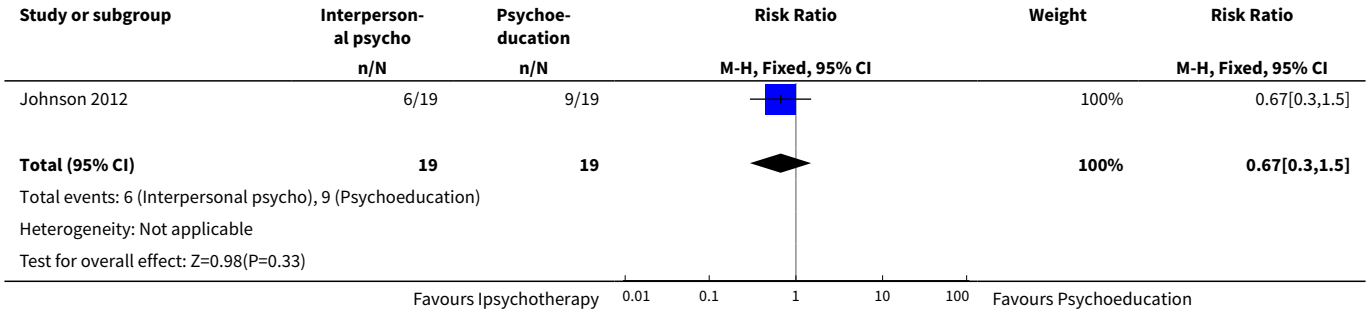
Analysis 8.1. Comparison 8 Multi-systemic therapy vs adolescent substance treatment group, Outcome 1 Arrests between 6 and 24 months.



Comparison 9. Interpersonal psychotherapy vs psychoeducational controls

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Substance abuse relapse at 3 months	1	38	Risk Ratio (M-H, Fixed, 95% CI)	0.67 [0.30, 1.50]

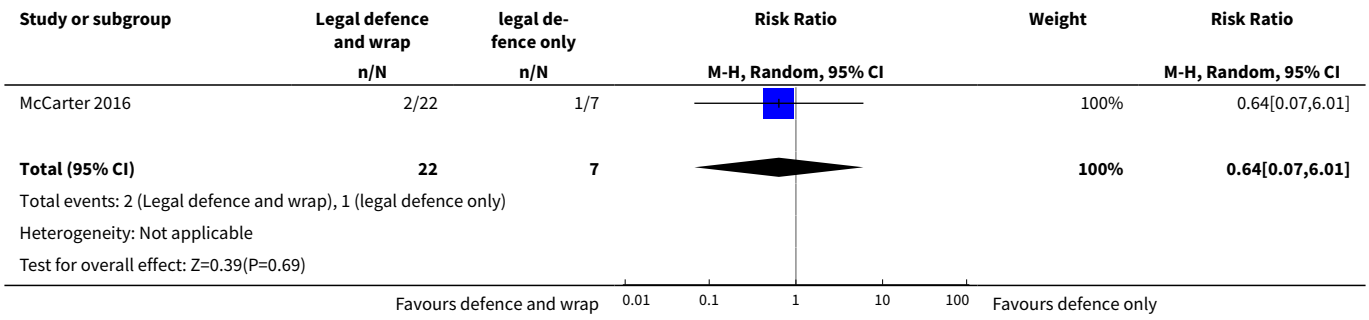
Analysis 9.1. Comparison 9 Interpersonal psychotherapy vs psychoeducational controls, Outcome 1 Substance abuse relapse at 3 months.



Comparison 10. Legal defence services and wrap-around social work services vs legal defence work only

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Number of new offences committed at 12 months	1	29	Risk Ratio (M-H, Random, 95% CI)	0.64 [0.07, 6.01]

Analysis 10.1. Comparison 10 Legal defence services and wrap-around social work services vs legal defence work only, Outcome 1 Number of new offences committed at 12 months.



ADDITIONAL TABLES

Table 1. Mental health diagnoses

Study, year	Criteria used for diagnoses	Description of mental health problem
Cosden 2003	Determined by a psychiatrist/psychologist on the basis of a clinical interview and observations	Mood disorder Schizophrenia Bipolar disorder Other Dual diagnosis
Cullen 2012	Primary clinical diagnosis of a psychotic disorder. Diagnosis mechanism not reported	Schizophrenia Schizoaffective disorder Bipolar disorder Other psychotic disorder
Dakof 2015	Diagnostic Interview Schedule for Children (DISC-2) - identifying presence of mental disorders according to the DSM-III Youth Self-Report	Presence of mental health disorders Externalising subscales
Johnson 2012	Hamilton Rating Scale for Depression Median duration of index episode in months Number of depressive episodes Number of previous suicide attempts DSM-IV Axis I disorders using the SCID-I/II	Criteria for a major depressive disorder at least 4 weeks after substance abuse treatment Minimum score of 18 on the Hamilton Rating Scale for Depression
Lanza 2014	DSM-IV Mini International Neuropsychiatric Interview Anxiety Sensitivity Index	Anxiety Mental health disorders Antisocial personality disorder

Table 1. Mental health diagnoses *(Continued)*

		Major depressive disorder
		Generalised anxiety disorder
Malouf 2017	Borderline Personality Disorder Features assessed with the Personality Assessment Inventory	Affective instability
		Identity problems
		Negative relationships
		Impulsivity
McCarter 2016	Youth Self-Report that contain scales orientated to the DSM-IV	Somatic complaints
		Anxiety and depression
		Social problems
		Internalising and externalising (thought and attention problems)
Sacks 2004	DIS	Diagnosis of lifetime Axis I or Axis II mental disorder
		Antisocial personality disorder
Sacks 2008	Global Severity Index	Depression
	Beck Depression Inventory	PTSD
	Lifetime of mental health	Lifetime of mental health
	PTSD Symptom Scale - Interview Posttraumatic Stress Diagnostic Scale	
Sacks 2011	DSM-IV diagnostic criteria	Depression
	Beck Depression Inventory	PTSD
	Post Traumatic Stress Disorder Symptom Scale	Psychological distress
	Brief Symptom Inventory	
	Global Severity Index	
Stein 2011	CES-D Scale	Scores > 16 indicate presence of significant depression; 69.8% had
		significant depressive symptoms
Sundell 2008	DSM-IV diagnostic criteria	Conduct disorder
	Youth Self-Report	Internalising and externalising
		Total behaviour problems
Wexler 1999;	Not specified	Antisocial personality disorder
Prendergast 2003; Prendergast 2004		Phobias
		PTSD
		Depression
		Dysthymia

Table 1. Mental health diagnoses *(Continued)*

Attention deficit hyperactivity disorder

CES-D: Center for Epidemiological Studies - Depression; DIS: Diagnostic Interview Schedule; *DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; PTSD: post-traumatic stress disorder; SCID: Structured Clinical Interview for DSM Disorders.

APPENDICES

Appendix 1. MEDLINE (R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, and Ovid MEDLINE(R)

MEDLINE search
1 exp substance related disorders/ (274070)
2 street drugs/ (10355)
3 designer drugs/ (1439)
4 exp narcotics/ (120114)
5 ((substance$ or drug$ or narcotic$) adj2 (addict$ or depend$ or disorder$ or abuse$ or abusing or misuse$ or misusing or consumption$ or withdraw$ or withdraw$ or detox$)).ti,ab. (100176)
6 (mdma or alcohol$ or opiate$ or opioid$ or opium or heroin or methadone or cocaine or amphetamine$ or marijuana or cannabis or crack or phencyclidine).ti,ab. (491028)
7 1 or 2 or 3 or 4 or 5 or 6 (713470)
8 crime/ (15534)
9 criminals/ (4125)
10 prisoners/ (16035)
11 (justice system or remand$ or parole$ or probation or court$ or corrections or correctional or revocation).ti,ab. (56176)
12 (offend$ or criminal$ or convict$ or felon$).ti,ab. (37983)
13 (custody or custodial or gaol$ or jail$ or prison$ or incarcerat$ or inmate$).ti,ab. (29693)
14 (reoffend$ or reincarcerat$ or recidiv$ or ex-offender$).ti,ab. (5525)
15 8 or 9 or 10 or 11 or 12 or 13 or 14 (126620)
16 7 and 15 (16717)
17 randomized controlled trial.pt. (516039)
18 controlled clinical trial.pt. (101743)
19 randomized.ab. (453171)
20 placebo.ab. (210619)
21 drug therapy.fs. (2199170)
22 randomly.ab. (312199)
23 trial.ab. (477783)

(Continued)

24 groups.ab. (1925728)

25 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 (4548008)

26 exp animals/ not humans.sh. (4814392)

27 25 not 26 (3934677)

28 16 and 27 (3760)

29 (201404$ or 201405$ or 201406$ or 201407$ or 201408$ or 201409$ or 201410$ or 201411$ or 201412$).ed. (771773)

30 (2015$ or 2016$ or 2017$).ed. (3473901)

31 ("20180101" or "20180102" or "20180103" or "20180104" or "20180105").ed. (19503)

32 29 or 30 or 31 (4265177)

33 28 and 32 (822)

Appendix 2. Embase search strategy via Ovid

Embase search
1 substance abuse/ (49037)
2 drug dependence/ (46621)
3 addiction/ (49762)
4 drug abuse/ (49453)
5 intravenous drug abuse/ (9700)
6 opiate addiction/ (14284)
7 heroin dependence/ (8918)
8 cocaine dependence/ (11405)
9 morphine addiction/ (3077)
10 cannabis addiction/ (8306)
11 alcoholism/ (114191)
12 alcohol abuse/ (25949)
13 ((substance$ or drug$ or narcotic$) adj2 (addict$ or depend$ or disorder$ or abuse$ or abusing or misuse$ or misusing or consumption$ or withdraw$ or withdraw$ or detox$)).ti,ab. (122248)
14 (mdma or alcohol$ or opiate$ or opioid$ or opium or heroin or methadone or cocaine or amphetamine$ or marijuana or cannabis or crack or phencyclidine).ti,ab. (598185)
15 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 (773484)
16 exp crime/ (77511)
17 criminal behavior/ (7677)
18 criminal justice/ (5597)

(Continued)

19 prisoner/ or offender/ (25391)

20 (justice system or remand$ or parole$ or probation or court$ or corrections or correctional or revocation).ti,ab. (56577)

21 (offend$ or criminal$ or convict$ or felon$).ti,ab. (44660)

22 (custody or custodial or gaol$ or jail$ or prison$ or incarcerat$ or inmate$).ti,ab. (32476)

23 (reoffend$ or reincarcerat$ or recidiv$ or ex-offender$).ti,ab. (6561)

24 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 (186404)

25 clinical trial/ (968061)

26 randomized controlled trial/ (482319)

27 randomization/ (76536)

28 single blind procedure/ (30101)

29 double blind procedure/ (145050)

30 crossover procedure/ (53840)

31 placebo/ (316535)

32 randomi?ed controlled trial$.tw. (170107)

33 rct.tw. (26496)

34 random allocation.tw. (1760)

35 randomly allocated.tw. (28885)

36 allocated randomly.tw. (2297)

37 (allocated adj2 random).tw. (874)

38 single blind$.tw. (20390)

39 double blind$.tw. (184823)

40 ((treble or triple) adj blind$).tw. (751)

41 placebo$.tw. (265371)

42 prospective study/ (415317)

43 or/25-42 (1860599)

44 case study/ (51268)

45 case report.tw. (353058)

46 abstract report/ or letter/ (1036148)

47 or/44-46 (1432272)

48 43 not 47 (1813215)

49 15 and 24 and 48 (1488)

50 ("201400" or "201500" or "201600" or "201701" or "201801" or "201802" or "201803").em. (28088822)

51 49 and 50 (1190)

Appendix 3. PsycInfo search strategy

PsycInfo
1 Addiction/ (9382)
2 Drug dependency/ (12153)
3 Drug Usage/ (16822)
4 Drug Abuse/ (44051)
5 Alcohol Abuse/ (16779)
6 Alcohol rehabiliation/ or drug rehabilitation/ (19802)
7 ((substance$ or drug$ or narcotic$) adj2 (addict$ or depend$ or disorder$ or abuse$ or abusing or misuse$ or misusing or consumption$ or withdraw$ or withdraw$ or detox$)).ti,ab. (74728)
8 (mdma or alcohol$ or opiate$ or opioid$ or opium or heroin or methadone or cocaine or amphetamine$ or marijuana or cannabis or crack or phencyclidine).ti,ab. (176992)
9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (241511)
10 crime/ (14125)
11 criminal behavior/ (8381)
12 recidivism/ (5324)
13 prisoners/ or prisons/ or incarceration/ (16728)
14 probation/ or parole/ (1864)
15 criminals/ or female criminals/ or male delinquency/ or juvenile delinquency/ (30689)
16 (justice system or remand$ or parole$ or probation or court$ or corrections or correctional or revocation).ti,ab. (53371)
17 (offend$ or criminal$ or convict$ or felon$).ti,ab. (69723)
18 (custody or custodial or gaol$ or jail$ or prison$ or incarcerat$ or inmate$).ti,ab. (37348)
19 (reoffend$ or reincarcerat$ or recidiv$ or ex-offender$).ti,ab. (8414)
20 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (142208)
21 (empirical study or treatment outcome clinical trial).md. (2237461)
22 (random$ adj4 trial$).ti,ab. (44037)
23 Placebo/ (5050)
24 (random* or sham or placebo*).ti,ab,hw. (203386)
25 ((singl* or doubl*) adj (blind* or dumm* or mask*)).ti,ab,hw. (23778)
26 21 or 22 or 23 or 24 or 25 (2291604)
27 9 and 20 and 26 (11242)
28 (201404$ or 201405$ or 201406$ or 201407$ or 201408$ or 201409$ or 201410$ or 201411$ or 201412$).up. (164403)
29 (2015$ or 2016$ or 2017$).up. (645836)
30 "20180101".up. (957)

(Continued)

31 28 or 29 or 30 (811196)

32 27 and 31 (2333)

Appendix 4. PASCAL, SciSearch, Social SciSSciSearch, Wilson Applied Science and Technology Abstracts search strategy

PASCAL search
#1TOPIC: (substance* NEAR/2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR TOPIC: (drug* NEAR/2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR TOPIC: (narcotic* NEAR/2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) DocType=All document types; Language=All languages; #2TOPIC: (mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine) DocType=All document types; Language=All languages; #3#2 OR #1 DocType=All document types; Language=All languages; #4TOPIC: ("justice system" or remand* or parole* or probation or court* or corrections or correctional or revocation) OR TOPIC: (crime or criminal or offender* or criminal* or convict* or felon*) OR TOPIC: (custody or custodial or gaol* or jail* or prison* or incarcerat* or inmate*) OR TOPIC: (reoffend* or reincarcerat* or recidiv* or ex-offender*) DocType=All document types; Language=All languages; #5#4 AND #2 DocType=All document types; Language=All languages;

Appendix 5. CENTRAL Register of Controlled trials search strategy via the Cochrane Library

CENTRAL search
#1 MeSH descriptor: [Substance-Related Disorders] explode all trees
#2 MeSH descriptor: [Street Drugs] explode all trees
#3 MeSH descriptor: [Designer Drugs] explode all trees
#4 MeSH descriptor: [Narcotics] explode all trees
#5 (substance* or drug* or narcotic*) near/2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw$ or withdraw* or detox*):ti,ab,kw (Word variations have been searched)
#6 mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine:ti,ab,kw (Word variations have been searched)
#7 #1 or #2 or #3 or #4 or #5 or #6
#8 MeSH descriptor: [Crime] explode all trees
#9 MeSH descriptor: [Criminals] explode all trees
#10 MeSH descriptor: [Prisoners] explode all trees
#11 (justice system) or remand* or parole* or probation or court* or corrections or correctional or revocation:ti,ab,kw (Word variations have been searched)

(Continued)

#12 custody or custodial or gaol* or jail* or prison* or incarcerat* or inmate*:ti,ab,kw (Word variations have been searched)

#13 reoffend* or reincarcerat* or recidiv* or ex-offender*:ti,ab,kw (Word variations have been searched)

#14 offend* or criminal* or convict* or felon:ti,ab,kw (Word variations have been searched)

#15 #8 or #9 or #10 or #11 or #12 or #13 or #14

#16 #7 and #15

Appendix 6. ASSIA search strategy

ASSIA search
(ti(substance* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(substance* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(drug* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(drug* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(narcotic* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(narcotic* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(mdma OR alcohol* OR opiate* OR opioid* OR opium OR heroin OR methadone OR cocaine OR amphetamine* OR marijuana OR cannabis OR crack OR phencyclidine) OR ab(mdma OR alcohol* OR opiate* OR opioid* OR opium OR heroin OR methadone OR cocaine OR amphetamine* OR marijuana OR cannabis OR crack OR phencyclidine)) AND (ti((justice system) OR remand* OR parole* OR probation OR court* OR corrections OR correctional OR revocation) OR ab((justice system) OR remand* OR parole* OR probation OR court* OR corrections OR correctional OR revocation) OR ti(crime OR offend* OR criminal OR convict* OR felon*) OR ab(crime OR offend* OR criminal* OR convict* OR felon*) OR ti(custody OR custodial OR gaol* OR jail* OR prison* OR incarcerat* OR inmate*) OR ab(custody OR custodial OR gaol* OR jail* OR prison* OR incarcerat*or inmate*) OR ti(reoffend* OR reincarcerat* OR recidiv* OR ex-offender*) OR ab(reoffend* OR reincarcerat* OR recidiv* OR ex-offender*)).

Appendix 7. Health Management Information Consortium (HMIC) search strategy via Ovid

HMIC
1 designer drugs/ (6)
2 exp narcotics/ (365)
3 ((substance$ or drug$ or narcotic$) adj2 (addict$ or depend$ or disorder$ or abuse$ or abusing or misuse$ or misusing or consumption$ or withdraw$ or withdraw$ or detox$)).ti,ab. (3032)
4 (mdma or alcohol$ or opiate$ or opioid$ or opium or heroin or methadone or cocaine or amphetamine$ or marijuana or cannabis or crack or phencyclidine).ti,ab. (6910)
5 1 or 2 or 3 or 4 (9003)
6 crime/ (450)
7 prisoners/ (652)
8 (justice system or remand$ or parole$ or probation or court$ or corrections or correctional or revocation).ti,ab. (3327)
9 (offend$ or criminal$ or convict$ or felon$).ti,ab. (2875)

(Continued)

10 (custody or custodial or gaol$ or jail$ or prison$ or incarcerat$ or inmate$).ti,ab. (2332)

11 (reoffend$ or reincarcerat$ or recidiv$ or ex-offender$).ti,ab. (105)

12 6 or 7 or 8 or 9 or 10 or 11 (7118)

13 5 and 12 (634)

14 limit 13 to yr="2014 -Current" (14)

Appendix 8. PAIS search strategy

PAIS
(ti(substance* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(substance* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(drug* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(drug* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(narcotic* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ab(narcotic* NEAR/2 (addict* OR depend* OR disorder* OR abuse* OR abusing OR misuse* OR misusing OR consumption* OR withdraw* OR withdraw* OR detox*)) OR ti(mdma OR alcohol* OR opiate* OR opioid* OR opium OR heroin OR methadone OR cocaine OR amphetamine* OR marijuana OR cannabis OR crack OR phencyclidine) OR ab(mdma OR alcohol* OR opiate* OR opioid* OR opium OR heroin OR methadone OR cocaine OR amphetamine* OR marijuana OR cannabis OR crack OR phencyclidine)) AND (ti((justice system) OR remand* OR parole* OR probation OR court* OR corrections OR correctional OR revocation) OR ab((justice system) OR remand* OR parole* OR probation OR court* OR corrections OR correctional OR revocation) OR ti(crime OR offend* OR criminal OR convict* OR felon*) OR ab(crime OR offender* OR criminal* OR convict* OR felon*) OR ti(custody OR custodial OR gaol* OR jail* OR prison* OR incarcerat* OR inmate*) OR ab(custody OR custodial OR gaol* OR jail* OR prison* OR incarcerat*or inmate*) OR ti(reoffend* OR reincarcerat* OR recidiv* OR ex-offender*) OR ab(reoffend* OR reincarcerat* OR recidiv* OR ex-offender*))

Appendix 9. Criminal Justice Abstracts search strategy

CJA search
S1 TI (substance* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR AB (substance* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR TI (drug* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR AB (drug* N2 (addict* or depend* or disord ... Search modes - Boolean/Phrase S2 TI (mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine) OR AB (mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine) Search modes - Boolean/Phrase S3 S1 OR S2 Search modes - Boolean/Phrase

(Continued)

S4
TI (justice system) or crime or remand* or parole* or probation or court* or corrections or correctional or revocation) OR AB (justice system) or crime or remand* or parole* or probation or court* or corrections or correctional or revocation) OR TI (offend* or criminal* or convict* or felon*) OR AB (offend* or criminal* or convict* or felon*) OR TI (custody or custodial or gaol* or jail* or prison* or incarcerat* or inmate*) OR AB (custody or custodial or gaol* or jail* or prison* or ...
Search modes - Boolean/Phrase

S5
S3 AND S4

Appendix 10. LILACS

LILACS search (via http://lilacs.bvsalud.org/en/).
tw:((remand or prison or prisoner or prisoners or prisão or cárcere or cárcel or detenidos or detentas or acusados or presidiáriossobre or presidiarias or preso or Privados or recluses or offender$ or infratoras or infratora or infratores or delicuentes or infrator or criminal$ or probation or probatorio or estagio or court or courts or tribunal or tribunals or secure establishment$ or secure facilit$ or reoffend$ or reincarcerat$ or recidivi$ or reincidencia or recidivante or reincidência or ex-offender$ or jail or jails or gaol or gaols or incarcerat$ or encarcerados or covict or convicts or convicted or felon or felons or conviction$ or reconviction$ or Convicções or convicciones or inmate$ or internos or high security or prisoners or law enforcement or jurisprudence))) AND (tw:((Substance abuse$ or substance misuse$ or substance use$ or usuários de substâncias or drug dependanc$ or drug abuse$ or drug use$ or drug misuse$ or drug addict$ or narcotics addict$ or narcotics use$ or narcotics misuse$ or narcotics abuse$ or chemical dependenc$ or opiates or heroin or crack or cocaine or amphetamines or cocaine or heroína or opioides or anfetaminas or opiáceos or opióides or addiction or adicción or adicciones or dependência or farmacodependente or adición or adição or dependence disorder$ or drug involved or Substance-related disorders or amphetamine-related disorders or cocaine-related disorders or marijuana abuse or opioid-related disorders or phencyclidine abuse or substance abuse intravenous or street drugs or designer drugs or cocaine or amphetamines or analgesics)))

Appendix 11. CINHAL Plus

S1	TI (substance* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR AB (substance* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR TI (drug* N2 (addict* or depend* or disorder* or abuse* or abusing or misuse* or misusing or consumption* or withdraw* or withdraw* or detox*)) OR AB (drug* N2 (addict* or depend* or disord ...
S2	TI (mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine) OR AB (mdma or alcohol* or opiate* or opioid* or opium or heroin or methadone or cocaine or amphetamine* or marijuana or cannabis or crack or phencyclidine)
S3	S1 OR S2
S4	TI (justice system) or crime or remand* or parole* or probation or court* or corrections or correctional or revocation) OR AB (justice system) or crime or remand* or parole* or probation or court* or corrections or correctional or revocation) OR TI (offend* or criminal* or convict* or felon*) OR AB (offend* or criminal* or convict* or felon*) OR TI (custody or custodial or gaol* or jail* or prison* or incarcerat* or inmate*) OR AB (custody or custodial or gaol* or jail* or prison* or ...
S5	S3 AND S4

Appendix 12. Criteria for assessing risk of bias

Item	Judgement	Description
1. Random sequence generation (selection bias)	Low risk	The investigators describe a random component in the sequence generation process such as random number table; computer random number generator; coin tossing; shuffling cards or envelopes; throwing dice; drawing of lots; minimisation
	High risk	The investigators describe a non-random component in the sequence generation process such as odd or even date of birth; date (or day) of admission; hospital or clinic record number; alternation; judgement of the clinician; results of a laboratory test or a series of tests; availability of the intervention
	Unclear risk	Insufficient information about the sequence generation process to permit judgement of low or high risk
2. Allocation concealment (selection bias)	Low risk	Investigators enrolling participants could not foresee assignment because 1 of the following, or an equivalent method, was used to conceal allocation: central allocation (including telephone, web-based, and pharmacy-controlled, randomisation); sequentially numbered drug containers of identical appearance; sequentially numbered, opaque, sealed envelopes
	High risk	Investigators enrolling participants could possibly foresee assignments because 1 of the following methods was used: open random allocation schedule (e.g. a list of random numbers); assignment envelopes without appropriate safeguards (e.g. if envelopes were unsealed or nonopaque or were not sequentially numbered); alternation or rotation; date of birth; case record number; any other explicitly unconcealed procedure
	Unclear risk	Insufficient information to permit judgement of low or high risk. This is usually the case if the method of concealment is not described or is not described in sufficient detail to allow a definitive judgement
3. Blinding of outcome assessor (detection bias) Objective outcomes	Low risk	No blinding of outcome assessment, but the review authors judge that the outcome measurement is not likely to be influenced by lack of blinding Blinding of outcome assessment ensured, and unlikely that blinding could have been broken
4. Blinding of outcome assessor (detection bias) Subjective outcomes	Low risk	No blinding of outcome assessment, but the review authors judge that the outcome measurement is not likely to be influenced by lack of blinding Blinding of outcome assessment ensured, and unlikely that blinding could have been broken
	High risk	No blinding of outcome assessment, and the outcome measurement is likely to be influenced by lack of blinding Blinding of outcome assessment, but likely that the blinding could have been broken, and the outcome measurement is likely to be influenced by lack of blinding
	Unclear risk	Insufficient information to permit judgement of low or high risk
7. Incomplete outcome data (attrition bias)	Low risk	No missing outcome data Reasons for missing outcome data unlikely to be related to true outcome (for survival data, censoring unlikely to be introducing bias)

(Continued)

For all outcomes except retention in treatment or dropout		Missing outcome data balanced in numbers across intervention groups, with similar reasons for missing data across groups For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk not enough to have a clinically relevant impact on the intervention effect estimate For continuous outcome data, plausible effect size (difference in means or standardised difference in means) among missing outcomes not enough to have a clinically relevant impact on observed effect size Missing data have been imputed through appropriate methods All randomised participants are reported/analysed in the group they were allocated to by randomisation, irrespective of non-compliance and co-interventions (intention-to-treat)
	High risk	Reason for missing outcome data likely to be related to true outcome, with either imbalance in numbers or reasons for missing data across intervention groups For dichotomous outcome data, the proportion of missing outcomes compared with observed event risk enough to induce clinically relevant bias in intervention effect estimate For continuous outcome data, plausible effect size (difference in means or standardised difference in means) among missing outcomes enough to induce clinically relevant bias in observed effect size 'As-treated' analysis done with substantial departure of the intervention received from that assigned at randomisation
	Unclear risk	Insufficient information to permit judgement of low or high risk (e.g. number randomised not stated, no reasons for missing data provided; number of dropout not reported for each group)
8. Selective reporting (reporting bias)	Low risk	The study protocol is available and all of the study's prespecified (primary and secondary) outcomes that are of interest in the review have been reported in the prespecified way The study protocol is not available, but it is clear that published reports include all expected outcomes, including those that were prespecified (convincing text of this nature may be uncommon)
	High risk	Not all of the study's prespecified primary outcomes have been reported 1 or more primary outcomes are reported via measurements, analysis methods, or subsets of the data (e.g. subscales) that were not prespecified 1 or more reported primary outcomes were not prespecified (unless clear justification for their reporting is provided, such as an unexpected adverse effect) 1 or more outcomes of interest in the review are reported incompletely so they cannot be entered in a meta-analysis The study report fails to include results for a key outcome that would be expected to have been reported for such a study
	Unclear risk	Insufficient information to permit judgement of low or high risk

WHAT'S NEW

Date	Event	Description
12 March 2019	New search has been performed	This update represents an additional 5 trials, bringing the total number of trials in this review to 13. The search strategies are complete up until 6 February 2019. The 13 trials represent 2501 participants and 21 publications.
12 March 2019	New citation required but conclusions have not changed	Conclusions have not changed

HISTORY

Review first published: Issue 1, 2014

Date	Event	Description
2 June 2015	Amended	Amended the byline
18 May 2015	New citation required but conclusions have not changed	Conclusions have not changed
11 July 2014	New search has been performed	This review has been updated to May 2014. Through this process, 3 trials have been added, bringing the total number of trials for this review to 8 and representative publications to 14
28 May 2012	New search has been performed	This review has been updated using searches to 21 March 2013. The review represents 1 in a family of 4 reviews. These reviews cover pharmacological and non-pharmacological interventions and drug-using female offenders. This review of interventions with drug-using offenders with co-occurring mental illness contains 5 randomised controlled trials. These trials represent a total of 1502 participants
2 October 2011	New search has been performed	The updated version of this review produced a new document with additional findings reflecting searches up to 11 November 2011. Five new authors have been added to this version of the review. These include Steven Duffy, Rachael McCool, Matthew Neilson, Catherine Hewitt, and Marrissa Martyn-St James
1 July 2011	Amended	This review has been converted to new review format
8 June 2011	New search has been performed	This review has been substantially updated
19 May 2006	New citation required and conclusions have changed	Substantive amendments have been made

CONTRIBUTIONS OF AUTHORS

Searches were constructed and conducted by KW. The independent review team inspected the search hits by reading titles and abstracts. Each potentially relevant study located in the search was obtained as a full article and was independently assessed for inclusion by the review team. In the case of discordance, a third independent review author arbitrated. When it was not possible to evaluate the study because of language problems or missing information, it was classified as 'translation/information required to determine decision' until a translation or further details were provided. The team of review authors conducted data extraction for these papers. Results were compiled and organised by AEP, LB, and CH, the review team, and all review authors contributed towards the final draft text.

DECLARATIONS OF INTEREST

Amanda E Perry has no interests to declare related to this work.

Marrissa Martyn-St James has no interests to declare related to this work.

Julie M Glanville has no interests to declare related to this work.

Kath Wright has no interests to declare related to this work.

Catherine Hewitt has no interests to declare related to this work.

Lucy Burns has no interests to declare related to this work.

Santosh Kumar has no interests to declare related to this work.

Pratish Thakkar has no interests to declare related to this work.

Anne Aboaja has no interests to declare related to this work.

Caroline Pearson has no interests to declare related to this work.

Shilpi Swami has no interests to declare related to this work.

SOURCES OF SUPPORT

Internal sources

- No sources of support supplied

External sources

- The Department of Health funded the original review, UK.
- National Institute for Health Research (NIHR), UK.

This project is funded by the National Institute for Health Research (NIHR), Systematic Reviews Programme, 2017 Cochrane Incentive award 17/62/06. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

DIFFERENCES BETWEEN PROTOCOL AND REVIEW

We decided to limit our search for this update on studies on effectiveness, because we verified from previous updates that the data on cost and cost-effectiveness are too sparse and heterogeneous to provide any meaningful information. Performance bias was not assessed.

INDEX TERMS

Medical Subject Headings (MeSH)

Case Management; Crime [prevention & control] [statistics & numerical data]; Diagnosis, Dual (Psychiatry); Law Enforcement; Mental Disorders [*therapy]; Motivational Interviewing; Psychotherapy; Randomized Controlled Trials as Topic; Substance-Related Disorders [*therapy]; Therapeutic Community

MeSH check words

Adolescent; Adult; Female; Humans; Male; Young Adult